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Washington Basin Outlook Report February 1, 2000



Basin Outlook Reports and Federal - State - Private Cooperative Snow Surveys

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How forecasts are made

Most of the annual streamflow in the western United States originates as snowfall that has accumulated in the mountains during the winter and early spring. As the snowpack accumulates, hydrologists estimate the runoff that will occur when it melts. Measurements of snow water equivalent at selected manual snow courses and automated SNOTEL sites, along with precipitation, antecedent streamflow, and indices of the El Niño / Southern Oscillation are used in computerized statistical and simulation models to prepare runoff forecasts. These forecasts are coordinated between hydrologists in the Natural Resources Conservation Service and the National Weather Service. Unless otherwise specified, all forecasts are for flows that would occur naturally without any upstream influences.

Forecasts of any kind, of course, are not perfect. Streamflow forecast uncertainty arises from three primary sources: (1) uncertain knowledge of future weather conditions, (2) uncertainty in the forecasting procedure, and (3) errors in the data. The forecast, therefore, must be interpreted not as a single value but rather as a range of values with specific probabilities of occurrence. The middle of the range is expressed by the 50% exceedance probability forecast, for which there is a 50% chance that the actual flow will be above, and a 50% chance that the actual flow will be below, this value. To describe the expected range around this 50% value, four other forecasts are provided, two smaller values (90% and 70% exceedance probability) and two larger values (30%, and 10% exceedance probability). For example, there is a 90% chance that the actual flow will be more than the 90% exceedance probability forecast. The others can be interpreted similarly.

The wider the spread among these values, the more uncertain the forecast. As the season progresses, forecasts become more accurate, primarily because a greater portion of the future weather conditions become known; this is reflected by a narrowing of the range around the 50% exceedance probability forecast. Users should take this uncertainty into consideration when making operational decisions by selecting forecasts corresponding to the level of risk they are willing to assume about the amount of water to be expected. If users anticipate receiving a lesser supply of water, or if they wish to increase their chances of having an adequate supply of water for their operations, they may want to base their decisions on the 90% or 70% exceedance probability forecasts, or something in between. On the other hand, if users are concerned about receiving too much water (for example, threat of flooding), they may want to base their decisions on the 30% or 10% exceedance probability forecasts, or something in between. Regardless of the forecast value users choose for operations, they should be prepared to deal with either more or less water. (Users should remember that even if the 90% exceedance probability forecast is used, there is still a 10% chance of receiving less than this amount.) By using the exceedance probability information, users can easily determine the chances of receiving more or less water.

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Washington Water Supply Outlook

February 2000

General Outlook

Though behind last years' record setting snowpack, Washington is still ahead of the curve for most river basins. Seasonally normal temperatures have helped build snowpack in the lower elevations and reduce runoff from melting snow. With several good snow accumulation months to go, we have a great chance of bring all basins up to par by the end of the season.

Snowpack

The February 1 statewide SNOTEL readings were above average at 117%. The Similkameen River snow surveys reported the lowest readings at 73% of average. Readings taken in the Lewis River Basin reported the highest at 158% of average. Westside averages from SNOTEL and February 1 snow surveys included the North Puget Sound river basins with 122%, the Central Puget river basins with 134%, and the Lewis-Cowlitz basins with 142%. Snowpack along the east slopes of the Cascade Mountains included the Yakima area with 109% and the Wenatchee area with 94%. Snowpack in the Spokane River Basin was at 110% and the Pend Oreille River Basin, including Canadian data, had 91% of average. Maximum snow cover in Washington was at Paradise Park SNOTEL near Mount Rainer with a water content of 53.9 inches. This site would normally have 38.5 inches of water content on February 1. Last year at this time Paradise Park had 59.3 inches of snow water. The highest average in the state was Lone Pine SNOTEL in the Lewis River Basin with 177% of average.

BASIN	PERCENT OF LAST YEAR	PERCENT OF AVERAGE
Spokane	92	110
Newman Lake	99	150
Pend Oreille	76	91
Okanogan	69	93
Methow	63	93
Similkameen	52	73
Wenatchee	73	102
Chelan	73	106
Stemilt Creek	69	88
Yakima	78	109
Ahtanum Creek	67	83
Walla Walla	76	109
Lower Snake	87	113
Cowlitz	80	126
Lewis	94	158
White	92	119
Green	114	115
Puyallup	92	119
Cedar	93	142
Snoqualmie	91	121
Skykomish	88	115
Skagit	71	105
Baker	91	134
Nooksack	95	127
Olympic Peninsula	69	119

Precipitation

During the month of January, the National Weather Service and Natural Resources Conservation Service climate stations showed a range of below to above average precipitation for Washington river basins. The highest percent of average in the state was at Green Lake SNOTEL. Green Lake reported 209% of average for a total of 12.8 inches. The average for this site is 6.13 inches for January. Averages for the water year varied from 127% of average in the Walla Walla River Basin to 80% of average in the White - Green - Puyallup river basins. There was a tie of 158% for the highest individual site average at Morse Lake and Bumping Ridge SNOTEL sites.

RIVER BASIN	JANUARY PERCENT OF AVERAGE	WATER YEAR PERCENT OF AVERAGE
Spokane	105	117
Colville-Pend Oreille	93	108
Okanogan-Methow	86	94
Wenatchee-Chelan	97	111
Upper Yakima	92	116
Lower Yakima	126	127
Walla Walla	127	119
Lower Snake	116	116
Cowlitz-Lewis	105	122
White-Green-Puyallup	80	104
Central Puget Sound	97	121
North Puget Sound	81	114
Olympic Peninsula	109	129

Reservoir

Reservoir levels are being maintained at well below capacity throughout the state as managers prepare for anticipated spring storage needs. Seasonably cooler temperatures have reduced lake inflow, allowing for normal reduction in storage levels. Reservoir storage in the Yakima Basin was 579,700-acre feet, 112% of average for the Upper Reaches and 154,800-acre feet, 125% of average for Rimrock and Bumping Lakes. Storage at the Okanogan reservoirs was 131% of average for February 1. The power generation reservoirs included the following: Coeur d'Alene Lake, 65,400 acre feet, 51% of average and 27% of capacity; Chelan Lake, 444,100 acre feet, 99% of average and 66% of capacity; and the three Skagit River reservoirs at 99% of average and 74% of capacity.

BASIN	PERCENT OF CAPACITY	PERCENT OF AVERAGE
Spokane	27	51
Colville-Pend Oreille	65	89
Okanogan-Methow	77	131
Wenatchee-Chelan	66	99
Upper Yakima	70	112
Lower Yakima	67	125
North Puget Sound	74	99

For more information contact your local Natural Resources Conservation Service office.

Streamflow

February forecasts indicate near normal summer flows for most streams in the state. They vary from 118% of average for the Klickitat River near Glenwood to 85% of average for Salmon Creek near Conconully. February forecasts for some Western Washington streams include the Cedar River near Cedar Falls, 105%; Green River, 97%; and Skagit River, 105%. Some Eastern Washington streams include the Yakima River near Parker, 100%; Wenatchee River at Peshastin, 100%; and Spokane River near Post Falls, 108%. Volumetric forecasts are developed using current, historic and average snowpack, precipitation and streamflow data collected and coordinated by organizations cooperating with NRCS.

Streamflows reported for January varied from well above to well below average. The Kettle River near Laurier, had the highest flows with 181% of average. The Chelan River at Chelan with 37% of average, was the lowest in the state. Other streamflows were the following percentage of average: the Priest River, 89%; the Columbia at The Dalles, 92%; the Spokane at Spokane, 76%; the Columbia below Rock Island Dam, 105%; the Cle Elum River near Roslyn, 51%; and the Snake River below Ice Harbor Dam, 87%.

BASIN

PERCENT OF AVERAGE
MOST PROBABLE FORECAST
(50 PERCENT CHANCE OF EXCEEDENCE)

Spokane	108-113
Colville-Pend Oreille	94-112
Okanogan-Methow	85-102
Wenatchee-Chelan	100-105
Upper Yakima	103-105
Lower Yakima	100-118
Walla Walla	106-107
Lower Snake	91-107
Cowlitz-Lewis	100-118
White-Green-Puyallup	97
Central Puget Sound	98-105
North Puget Sound	101-114
Olympic Peninsula	106-112

STREAM

PERCENT OF AVERAGE
JANUARY STREAMFLOWS

Pend Oreille Below Box Canyon	85
Kettle at Laurier	118
Columbia at Birchbank	105
Spokane at Long Lake	81
Similkameen at Nighthawk	116
Okanogan at Tonasket	143
Methow at Pateros	159
Chelan at Chelan	37
Wenatchee at Pashastin	86
Yakima at Cle Elum	88
Yakima at Parker	62
Naches at Naches	73
Grande Ronde at Troy	68
Snake below Lower Granite Dam	84
SF Walla Walla near Milton Freewater	85
Lewis at Ariel	51
Cowlitz below Mayfield Dam	64
Skagit at Concrete	70

For more information contact your local Natural Resources Conservation Service office.

BASIN SUMMARY OF SNOW COURSE DATA

FEBRUARY 2000

SNOW COURSE	ELEVATION	DATE	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE 1961-90	MCCULLOCH SNOW COURSE	CAN. ELEVATION	1/28/00 DATE	19 SNOW DEPTH	3.8 WATER CONTENT	5.1 LAST YEAR	4.7 AVERAGE 1961-90
ABERDEEN LAKE CAN.	4000	1/27/00	18	3.8	4.4	4.7	MEADOWS CABIN	1900	1/29/00	24	7.3	5.1	5.4
ALPINE MEADOWS PILL	3500	2/01/00	---	43.8	37.5	28.8	MEADOWS PASS PILL	3240	2/01/00	---	20.6	21.0	16.2
ASHLEY DIVIDE	4820	1/25/00	19	4.4	4.7	5.0	MERRITT	2140	1/28/00	31	8.6	16.8	12.4
BADGER PASS PILL	6900	2/01/00	---	18.9	29.8	22.8	MICA CREEK PILL	4750	2/01/00	---	20.7	23.5	---
BARKER LAKES PILL	8250	2/01/00	---	5.5	9.4	9.4	MISSEZULA MTN CAN.	5080	1/28/00	17	3.9	10.9	6.5
BARNES CREEK CAN.	5320	1/30/00	43	13.2	19.3	13.4	MISSION RIDGE	5000	1/31/00	34	9.9	16.4	11.5
BASIN CREEK PILL	7180	2/01/00	---	4.0	6.2	5.0	MONASHEE PASS CAN.	4500	1/30/00	31	9.1	11.5	9.6
BASSOO PEAK	5150	1/31/00	27	7.2	7.4	---	MOOSE CREEK PILL	6200	2/01/00	---	12.7	14.8	11.6
BEAVER CREEK TRAIL	2200	1/29/00	51	15.4	18.3	9.7	MORRISSEY RIDGE CAN.	6100	2/01/00	---	14.2	24.1	19.4
BEAVER PASS	3680	1/28/00	61	19.8	28.7	19.7	MORSE LAKE PILL	5400	2/01/00	---	31.0	55.0	29.6
BERNE-MILL CREEK (d)	3170	1/28/00	66	19.8	26.5	19.9	MOSES MTN PILL	4800	2/01/00	---	10.5	20.6	10.0
BIG WHITE MTN CAN.	5510	1/29/00	39	11.8	17.6	13.3	MOSQUITO RDG PILL	5200	2/01/00	---	26.7	34.2	25.2
BLACK PINE PILL	7100	2/01/00	---	6.6	9.3	8.0	MOULTON RESERVOIR	6850	1/28/00	22	4.6	5.9	4.9
BLEWETT PASS #2	4270	1/27/00	39	12.6	10.1	11.6	MOUNT CRAG PILL	4050	2/01/00	---	24.1	37.0	16.9
BLEWETT PASS#2PILL	4270	2/01/00	---	9.7	11.8	13.6	MT. KOBAY CAN.	5500	1/29/00	24	6.2	9.9	8.5
BRENDA MINE CAN.	4450	2/01/00	---	8.1	12.5	8.9	MOUNT GARDNER PILL	2860	2/01/00	---	13.7	16.9	9.6
BRIEF	1600	1/27/00	19	4.1	7.0	6.0	MUTTON CREEK #1	5700	1/27/00	30	8.5	12.9	9.2
BROWN TOP AM	6000	1/28/00	122	45.4	---	41.2	N.F. ELK CR PILL	6250	2/01/00	---	7.4	9.1	8.1
BUMPING LAKE (NEW)	3400	1/27/00	40	9.8	16.9	14.2	NEW HOSOMEN LAKE	2800	1/28/00	27	7.2	9.3	8.0
BUMPING RIDGE PILL	4600	2/01/00	---	20.0	32.3	13.9	NEZ PERCE CMP PILL	5650	2/01/00	---	10.7	11.4	9.8
BUNCHGRASS MDWPILL	5000	2/01/00	---	19.6	28.3	18.8	NOISY BASIN PILL	6040	2/01/00	---	24.9	28.9	26.2
CHESSMAN RESERVOIR	6200	1/27/00	7	1.1	2.6	2.7	OLLALIE MDWS PILL	3960	2/01/00	---	31.9	49.4	34.3
CHICKEN CREEK	4060	1/27/00	48	12.8	14.6	10.9	OPHIR PARK	7150	1/29/00	32	8.4	12.9	11.2
CHIWAKUM G.S.	2500	1/28/00	26	7.6	12.8	8.7	PARADISE PARK PILL	5500	2/01/00	---	53.9	59.3	38.5
COLOCKUM PASS	5370	1/23/00	37	9.4	15.4	11.5	PARK CK RIDGE PILL	4600	2/01/00	---	32.2	45.5	29.6
COMBINATION PILL	5600	2/01/00	---	2.6	4.1	3.8	PETERSON MDW PILL	7200	2/01/00	---	4.3	6.4	6.5
COPPER BOTTOM PILL	5200	2/01/00	---	7.9	10.8	7.4	PIGTAIL PEAK PILL	5900	2/01/00	---	27.9	48.8	30.4
COPPER CREEK	5700	1/29/00	27	7.1	---	---	PIKE CREEK PILL	5930	2/01/00	---	14.9	24.0	17.1
CORRAL PASS PILL	6000	2/01/00	---	26.4	31.0	21.3	PIPESTONE PASS	7200	1/30/00	8	2.4	5.2	3.3
COUGAR MTN. PILL	3200	2/01/00	---	14.4	15.1	15.0	POPE RIDGE PILL	3540	2/01/00	---	12.4	18.4	13.9
COX VALLEY	4500	1/27/00	91	31.5	38.0	24.9	POSTILL LAKE CAN.	4200	1/31/00	19	4.3	7.9	5.5
COYOTE HILL	4200	1/27/00	31	7.1	8.9	7.5	POTATO HILL PILL	4500	2/01/00	---	19.7	27.7	16.4
DALY CREEK PILL	5780	2/01/00	---	7.0	9.3	7.8	QUARTZ PEAK PILL	4700	2/01/00	---	19.7	21.2	14.0
DEER PARK	5200	1/27/00	40	12.0	22.1	13.5	ROUND TOP MTN	4020	1/28/00	50	14.7	12.9	---
DEVILS PARK	5900	1/28/00	84	30.4	45.2	30.3	RAGGED RIDGE	3330	1/28/00	40	10.6	9.5	6.2
DISCOVERY BASIN	7050	1/28/00	26	5.0	7.4	6.8	RAINY PASS PILL	4780	2/01/00	---	25.0	40.1	24.5
DIX HILL	6400	1/29/00	27	7.6	8.6	8.2	REX RIVER PILL	1900	2/01/00	---	24.9	25.7	17.9
DOMMERIE FLATS	2200	1/26/00	26	6.6	6.2	7.0	ROCKER PEAK PILL	8000	2/01/00	---	5.9	9.1	9.8
EAST RAGGED SADDLE	3740	1/30/00	64	19.9	18.2	15.0	RUSTY CREEK	4000	1/27/00	18	3.5	4.4	5.0
EASY PASS AM	5200	2/01/00	---	48.0E	---	45.6	SADDLE MTN PILL	7900	2/01/00	---	14.1	21.3	17.0
ELBOW LAKE PILL	3200	2/01/00	---	37.6	36.3	23.4	SALMON MDWS PILL	4500	2/01/00	---	5.0	9.2	5.9
EMERY CREEK PILL	4350	2/01/00	---	10.4	11.2	10.9	SASSE RIDGE PILL	4200	2/01/00	---	24.2	33.4	21.6
ENDERBY CAN.	5800	1/30/00	88	30.7	36.6	25.2	SAVAGE PASS PILL	6170	2/01/00	---	16.2	23.4	17.4
FARRON CAN.	4000	1/28/00	33	9.4	9.8	9.3	SANMILL RIDGE	4700	2/02/00	82	26.7	24.2	23.9
FISH CREEK	8000	1/28/00	19	4.0	8.3	6.4	SHEEP CANYON PILL	4050	2/01/00	---	40.6	77.4	25.2
FISH LAKE	3370	1/26/00	90	28.6	40.0	21.1	SILVER STAR MTN CAN.	5600	1/30/00	64	22.4	25.2	18.9
FISH LAKE PILL	3370	2/01/00	---	26.2	34.1	22.0	SKALKAH PILL	7260	2/01/00	---	14.1	19.6	15.8
FLATTOP MTN PILL	6300	2/01/00	---	26.7	42.5	32.3	SKOOKUM CREEK PILL	3920	2/01/00	---	31.7	25.8	19.3
FOURTH OF JULY SUM	3200	1/26/00	40	9.8	8.4	7.2	SPENCER MDW PILL	3400	2/01/00	---	34.6	36.4	20.0
FREEZEOUT CK. TRAIL	3500	1/28/00	30	8.1	13.1	8.8	SPIRIT LAKE PILL	3100	2/01/00	---	9.9	13.3	6.4
FROHNER MDWS PILL	6480	2/01/00	---	3.5	5.3	5.6	SPOTTED BEAR MTN.	7000	1/30/00	34	9.7	10.0	10.3
GOAT CREEK	3600	1/31/00	21	4.4	5.5	5.2	STAHL PEAK PILL	6030	2/01/00	---	20.2	28.6	23.5
GRASS MOUNTAIN #2	2900	2/02/00	24	8.0	4.5	10.3	STAMPEDE PASS PILL	3860	2/01/00	---	34.2	32.6	28.8
GRAVE CRK PILL	4300	2/01/00	---	10.3	11.8	11.9	STEMITT SLIDE	5000	1/28/00	31	9.4	14.8	10.3
GREEN LAKE PILL	6000	2/01/00	---	16.1	22.2	14.1	STEVENS PASS PILL	4070	2/01/00	---	23.3	35.8	27.3
GRIFFIN CR DIVIDE	5150	1/31/00	27	7.0	9.4	---	STEVENS PASS SAND SD	3700	1/28/00	78	25.1	31.8	23.9
GROUSE CAMP PILL	5380	2/01/00	---	13.4	20.6	13.8	STORM LAKE	7780	1/27/00	28	5.8	9.0	8.7
HAMILTON HILL CAN.	4550	1/30/00	27	7.6	14.1	10.1	STRYKER BASIN	6180	1/27/00	62	17.6	24.4	21.6
HAND CREEK PILL	5030	2/01/00	---	7.8	9.1	8.3	STUART MOUNTAIN	7400	1/30/00	66	21.2	28.0	21.2
HARTS PASS PILL	6500	2/01/00	---	25.2	39.6	27.7	SUMMERLAND RES CAN.	4200	1/26/00	20	4.6	7.2	6.9
HELL ROARING DIVIDE	5770	1/27/00	66	19.1	23.2	20.5	SUMMIT G.S.	4600	1/31/00	26	6.2	7.3	5.6
HERRIG JUNCTION	4850	1/27/00	57	16.0	20.9	16.7	SUNSET PILL	5540	2/01/00	---	17.4	17.5	20.7
HIGH RIDGE PILL	4980	2/01/00	---	17.6	19.7	16.0	SURPRISE LKS PILL	4250	2/01/00	---	43.5	44.0	30.4
HOLBROOK	4530	1/30/00	27	7.0	7.1	7.2	TEN MILE LOWER	6600	1/27/00	17	2.8	4.0	5.0
HOODOO BASIN PILL	6050	2/01/00	---	26.8	39.2	31.0	TEN MILE MIDDLE	6800	1/27/00	21	4.2	6.4	7.6
HUMBOLDT GLCH PILL	4250	2/01/00	---	11.6	12.5	9.7	THUNDER BASIN	4200	1/29/00	53	16.8	21.4	13.5
HURRICANE	4500	1/27/00	47	14.7	21.9	13.7	TINKHAM CREEK PILL	3000	2/01/00	---	21.1	22.3	12.9
INTERGAARD	6450	1/27/00	17	3.2	5.5	5.2	TOUCHET #2 PILL	5530	2/01/00	---	22.5	33.0	20.8
ISINTOK LAKE CAN.	5100	1/26/00	17	3.4	6.2	5.2	TRINKUS LAKE	6100	1/30/00	84	26.0	28.8	25.0
JUNE LAKE PILL	3200	2/01/00	---	41.6	41.3	28.1	TROUGH #2 PILL	5310	2/01/00	---	7.2	10.7	6.4
KELLOGG PEAK	5560	2/03/00	74	25.0	30.6	---	TROUT CREEK CAN.	5650	1/29/00	19	4.4	7.2	5.4
KLESILKWA CAN.	3450	1/28/00	34	8.8	---	8.8	TRUMAN CREEK	4060	1/25/00	14	2.8	2.8	3.2
KRAFT CREEK PILL	4750	2/01/00	---	11.2	10.3	11.4	TUNNEL AVENUE	2450	1/27/00	48	15.7	23.3	15.4
LESTER CREEK	3100	2/02/00	58	16.8	15.0	14.8	TV MOUNTAIN	6800	1/30/00	38	10.4	15.6	12.0
LOLO PASS PILL	5240	2/01/00	70	21.4	30.3	21.1	TWELVEMILE PILL	5600	2/01/00	---	13.8	15.3	12.5
LONE PINE PILL	3800	2/01/00	---	36.9	45.3	20.8	TWIN CAMP	4100	2/02/00	52	24.3	20.0	16.9
LOOKOUT PILL	5140	2/01/00	---	22.7	27.5	22.3	TWIN LAKES PILL	6400	2/01/00	---	28.8	36.9	26.3
LOST HORSE PILL	5000	2/01/00	---	14.4	20.8	22.4	TWIN SPIRIT DIVIDE	3480	1/30/00	41	10.2	11.0	10.3
LOST LAKE PILL	6110	2/01/00	---	38.0	46.9	41.2	UPPER HOLLAND LAKE	6200	1/30/00	79	24.7	25.0	23.4
LUBRECHT FOREST NO 3	5450	1/31/00	18	4.2	4.7	5.0	UPPER WHEELER PILL	4400	2/01/00	---	7.8	10.3	9.3
LUBRECHT FOREST NO 4	4650	1/31/00	10	2.0	1.8	2.7	WARM SPRINGS PILL	7800	2/01/00	---	11.8	15.6	14.1
LUBRECHT FOREST NO 6	4040	1/31/00	11	2.2	2.0	3.2	WEASEL DIVIDE	5450	1/31/00	62	20.6	29.5	21.8
LUBRECHT HYDROPLT	4200	1/31/00	18	3.5	4.6	5.4	WELLS CREEK PILL	4200	2/01/00	---	23.5	27.7	24.6
LUBRECHT PILL	4680	2/01/00	---	4.0	3.7	4.5	WHITE PASS ES PILL	4500	2/01/00	---	15.2	18.1	15.5
LYMAN LAKE PILL	5900	2/01/00	---	44.6	59.0	39.0	WHITE ROCKS MTN CAN.	7200	1/31/00	40	12.8	26.1	15.4
LYNN LAKE	4000	2/02/00	56	19.3	15.2	14.8							
MARIAS PASS	5250	1/31/00	36	12.0	16.4	11.2							



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Washington State
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Helpful Internet Addresses

NRCS Snow Survey and Climate Services Homepages

Washington:
<http://www.wa.nrcs.usda.gov/nrcs/CoopSnoSrvy.htm>

Oregon:
<http://crystal.or.nrcs.usda.gov/snowsveys>

Idaho:
<http://idsnow.id.nrcs.usda.gov>

National Water and Climate Center (NWCC):
<http://www.wcc.nrcs.usda.gov>

NWCC Anonymous FTP Server:
[ftp.wcc.nrcs.usda.gov](ftp:wcc.nrcs.usda.gov)

USDA-NRCS Agency Homepages

Washington:
<http://www.wa.nrcs.usda.gov/nrcs>

NRCS National:
<http://www.ftw.nrcs.usda.gov>



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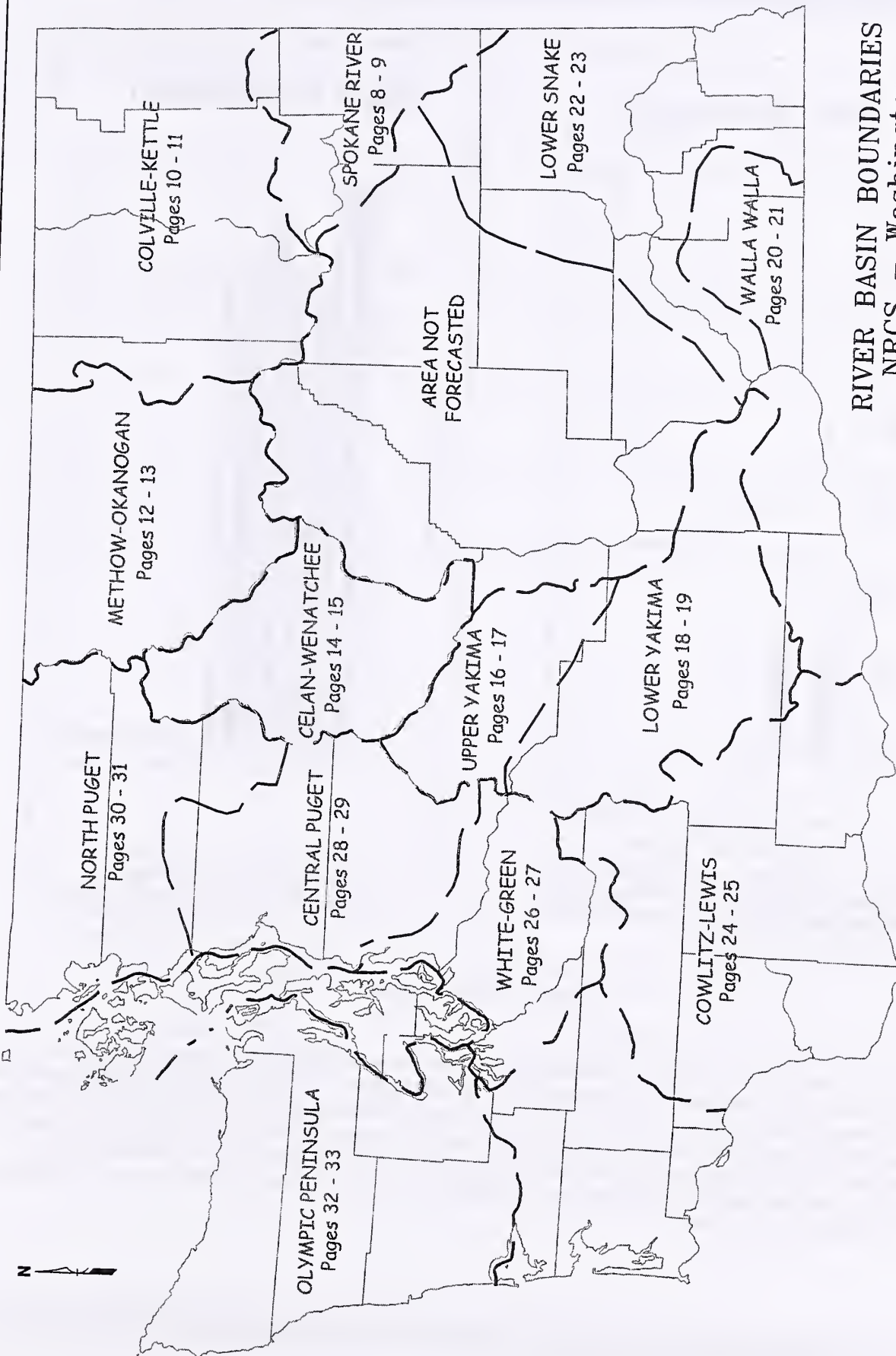
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Data Collection Offices

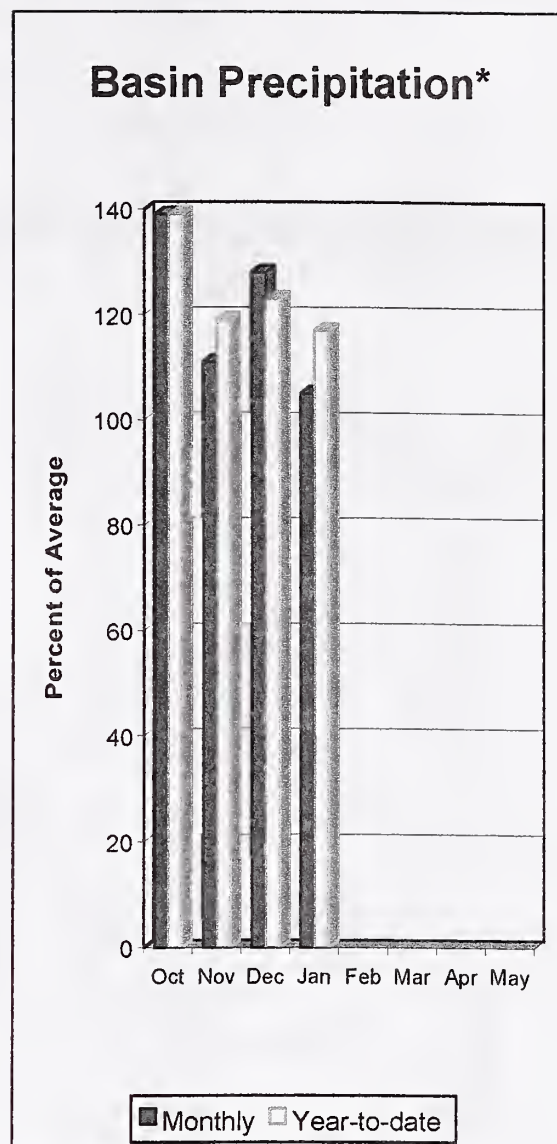
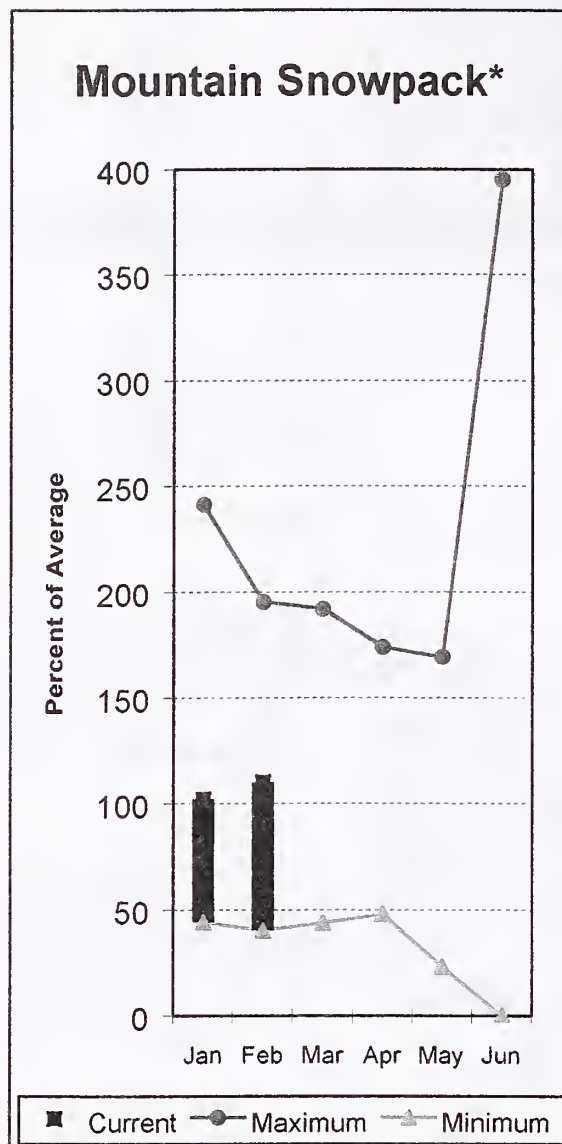
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RIVER BASIN BOUNDARIES
NRCS - Washington
1999

Spokane River Basin



*Based on selected stations

The February 1 forecasts for summer runoff within the Spokane River Basin are 108% of average near Post Falls and 113% at Long Lake. The forecast is based on a basin snowpack that is 110% of average and precipitation that is 117% of average for the water year. Precipitation for January was normal at 105% of average. Streamflow on the Spokane River at Long Lake, was 81% of average for January. February 1 storage in Coeur d'Alene Lake, was 65,400-acre feet, 51% of average and 27% of capacity. Snowpack at Quartz Peak SNOTEL site contained 19.7 inches of water, compared to the average February 1 reading of 14 inches. Average temperatures in the Spokane basin were 1 degree above normal.

For more information contact your local Natural Resources Conservation Service office.

Spokane River Basin

Streamflow Forecasts - February 1, 2000

<<===== Drier ===== Future Conditions ===== Wetter =====>>								
Forecast Point	Forecast Period	Chance Of Exceeding *						
		90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
SPOKANE near Post Falls (2)	APR-SEP	2334	2689	2930	108	3171	3526	2720
	APR-JUL	2308	2654	2890	110	3126	3472	2627
SPOKANE at Long Lake	APR-JUL	2625	3023	3293	113	3563	3961	2905
	APR-SEP	2826	3243	3527	113	3811	4228	3128

SPOKANE RIVER BASIN Reservoir Storage (1000 AF) - End of January					SPOKANE RIVER BASIN Watershed Snowpack Analysis - February 1, 2000			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
COEUR D'ALENE	238.5	65.4	123.5	127.8	SPOKANE RIVER	12	92	114
					NEWMAN LAKE	2	99	150

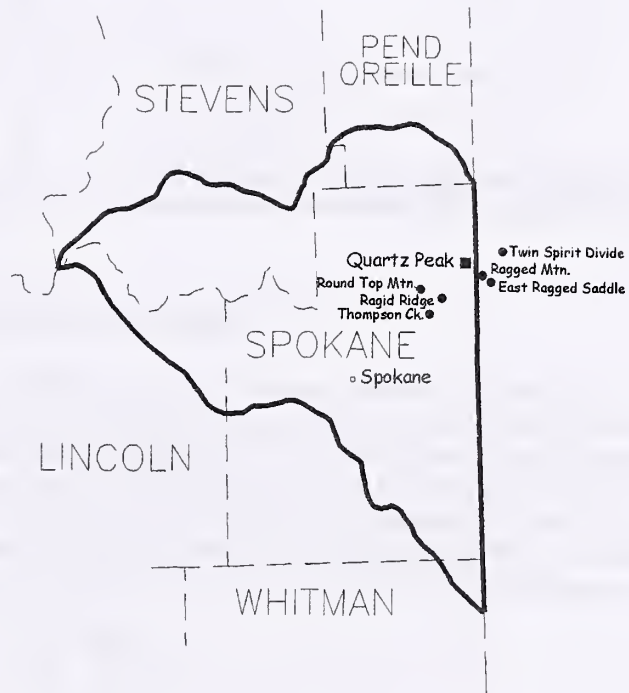
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

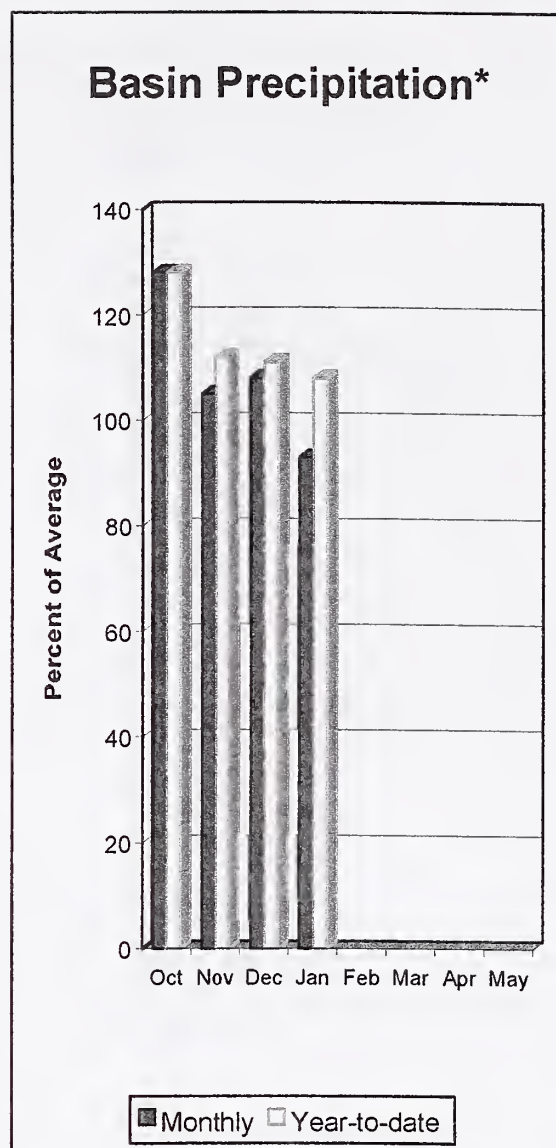
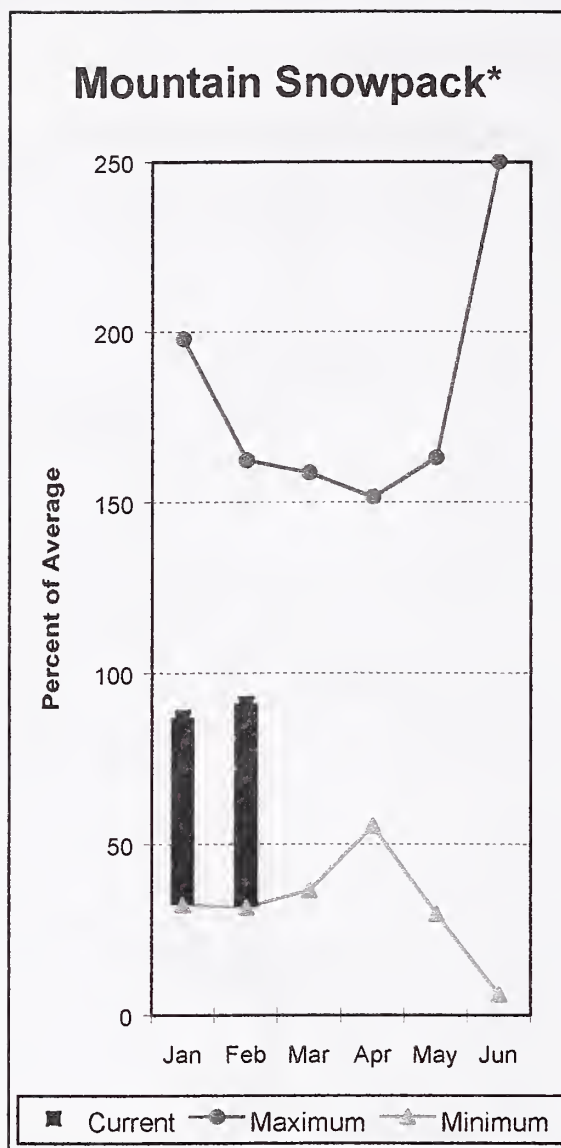
- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
 (2) - The value is natural flow - actual flow may be affected by upstream water management.

SPOKANE RIVER BASIN Percent of Average February 1, 2000

Snowpack - 110%
 Precipitation - 117%
 Reservoir - 51%



Colville - Pend Oreille River Basins



*Based on selected stations

The April – September average forecast for the Kettle River streamflow is 112%, Colville at Kettle Falls is 110%, and Priest River near the town of Priest River is 111%. January streamflow was 85% of average on the Pend Oreille River, 105% on the Columbia at the International Boundary and 181% on the Kettle River. February 1 snow cover was 91% of average in the Pend Oreille Basin and 96% in the Kettle River Basin. Precipitation during January was 93% of average, bringing the year-to-date precipitation to 108% of average. Reservoir storage in Roosevelt and Banks lakes was reported to be 89% of average and 65% of capacity on February 1. Average temperatures were 1-2 degrees above normal.

For more information contact your local Natural Resources Conservation Service office.

Colville - Pend Oreille River Basins

Streamflow Forecasts - February 1, 2000

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>						30-Yr Avg. (1000AF)
		Chance Of Exceeding *						
		90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
PEND OREILLE Lake Inflow (1,2)	APR-JUL	8578	11206	12400	94	13594	16222	13150
	APR-SEP	9320	12195	13500	94	14805	17680	14370
	APR-JUN	7092	9573	10700	94	11827	14308	11390
PRIEST near Priest River (1,2)	APR-JUL	762	871	921	113	971	1080	812
	APR-SEP	787	906	960	111	1014	1133	865
PEND OREILLE bl Box Canyon (1,2)	APR-JUL	9225	11615	12700	95	13785	16175	13380
	APR-SEP	10007	12615	13800	95	14985	17593	14590
	APR-JUN	8010	10066	11000	95	11934	13990	11570
CHAMOKANE CREEK near Long Lake	MAY-AUG	4.57	7.33	9.20	108	11.07	13.83	8.52
COLVILLE at Kettle Falls	APR-SEP	103	127	144	110	161	185	131
	APR-JUL	94	117	133	111	149	172	120
	APR-JUN	86	108	123	111	138	160	111
KETTLE near Laurier	APR-SEP	1715	1932	2080	112	2228	2445	1854
	APR-JUL	1666	1863	1998	114	2133	2330	1761
	APR-JUN	1487	1657	1773	112	1889	2059	1585
COLUMBIA at Birchbank (1,2)	APR-JUL	31517	35494	37300	106	39106	43083	35140
	APR-SEP	39256	44237	46500	106	48763	53744	43810
	APR-JUN	23014	25892	27200	106	28508	31386	25670
COLUMBIA at Grand Coulee Dm (1,2)	APR-SEP	55134	63707	67600	104	71493	80066	64850
	APR-JUL	46346	53535	56800	104	60065	67254	54543
	APR-JUN	36356	41957	44500	104	47043	52644	42756

COLVILLE - PEND OREILLE RIVER BASINS Reservoir Storage (1000 AF) - End of January

COLVILLE - PEND OREILLE RIVER BASINS Watershed Snowpack Analysis - February 1, 2000

Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
ROOSEVELT	5232.0	3180.5	3254.2	3749.0	COLVILLE RIVER	1	82	121
BANKS	715.0	675.1	673.5	599.0	PEND OREILLE RIVER	66	76	91
					KETTLE RIVER	6	76	96

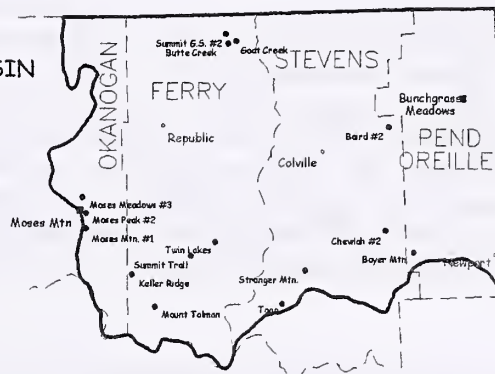
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

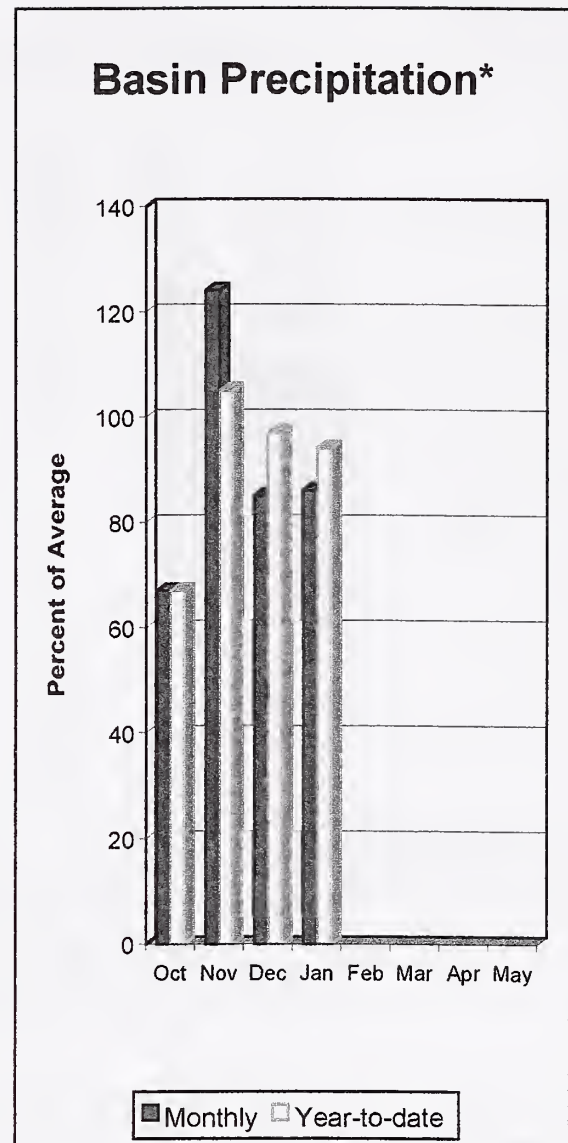
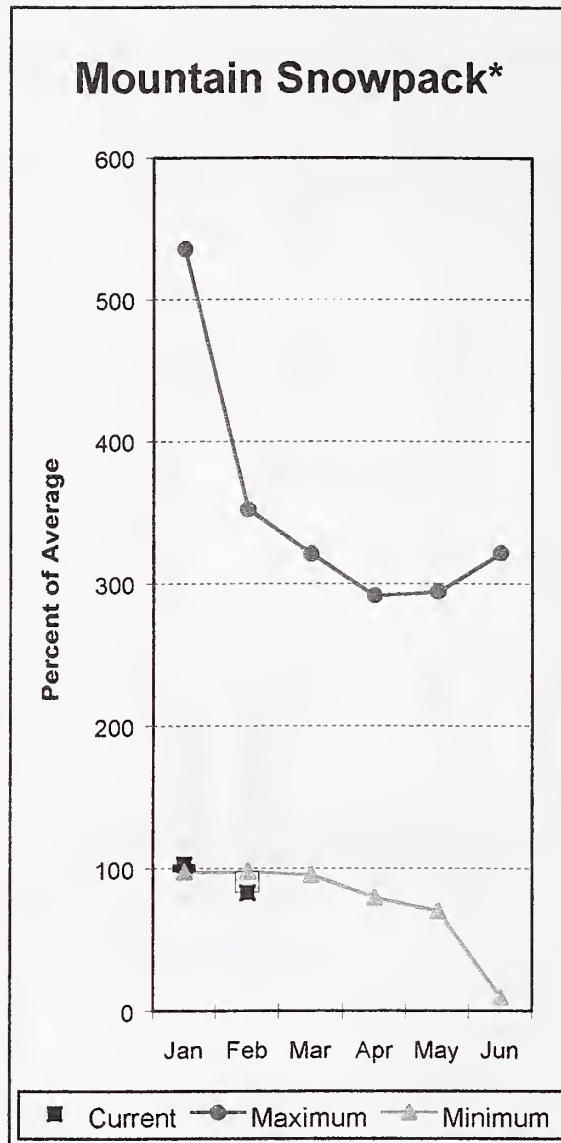
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.

(2) - The value is natural flow - actual flow may be affected by upstream water management.

COLVILLE-PEND OREILLE BASIN
Percent of Average
February 1, 2000
Snowpack - 103%
Precipitation - 108%
Reservoir - 89%



Okanogan - Methow River Basins



*Based on selected stations

Average summer runoff forecast for the Okanogan River is 95%, Similkameen River is 92%, Methow River is 102% and Salmon Creek is 85%. February 1 snow cover on the Okanogan was 93% of average and Methow was 93%. Moses Mountain SNOTEL site had a February 1 reading of 105% of average. January precipitation in the Okanogan-Methow was 86% of average, with precipitation for the water year at 94% of average. January streamflow for the Methow River was 159% of average, 143% for the Okanogan River and 116% for the Similkameen. Snow-water-content at the Salmon Meadows SNOTEL, near Conconully, was 5 inches. Average for this site is 5.9 inches on February 1. Combined storage in the Conconully Reservoirs was 18,100-acre feet, which is 77% of capacity and 131% of the February 1 average. Temperatures were 2-3 degrees above normal for the past month.

For more information contact your local Natural Resources Conservation Service office.

Okanogan - Methow River Basins

Streamflow Forecasts - February 1, 2000

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>						30-Yr Avg. (1000AF)
		90% (1000AF)	70% (1000AF)	Chance Of Exceeding * 50% (Most Probable) (1000AF) (% AVG.)		30% (1000AF)	10% (1000AF)	
SIMILKAMEEN near Nighthawk (1)	APR-JUL	863	1086	1188	91	1290	1513	1304
	APR-SEP	960	1180	1280	92	1380	1600	1399
	APR-JUN	705	917	1013	91	1109	1321	1113
OKANOGAN near Tonasket (1)	APR-JUL	720	1205	1425	97	1645	2130	1466
	APR-SEP	775	1301	1540	95	1779	2305	1623
	APR-JUN	617	1018	1200	97	1382	1783	1233
SALMON CREEK near Conconully	APR-JUL	3.7	11.0	16.0	84	21	28	19.1
	APR-SEP	4.5	11.9	17.0	85	22	30	20
METHOW RIVER near Pateros	APR-SEP	775	888	965	102	1042	1155	942
	APR-JUL	719	821	890	102	959	1061	873
	APR-JUN	609	699	760	102	821	911	746

OKANOGAN - METHOW RIVER BASINS Reservoir Storage (1000 AF) - End of January

Reservoir	Usable Capacity	*** Usable Storage ***		
		This Year	Last Year	Avg
SALMON LAKE		NO REPORT		
CONCONULLY RESERVOIR		NO REPORT		

OKANOGAN - METHOW RIVER BASINS Watershed Snowpack Analysis - February 1, 2000

Watershed	Number of Data Sites	This Year as % of	
		Last Yr	Average
OKANOGAN RIVER	17	69	93
OMAK CREEK	1	51	105
SANPOIL RIVER	0	0	0
SIMILKAMEEN RIVER	3	52	73
TOATS COULEE CREEK	1	47	48
CONCONULLY LAKE	3	64	85
METHOW RIVER	5	63	93

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
 (2) - The value is natural flow - actual flow may be affected by upstream water management.

OKANOGAN-METHOW BASIN

Percent of Average

February 1, 2000

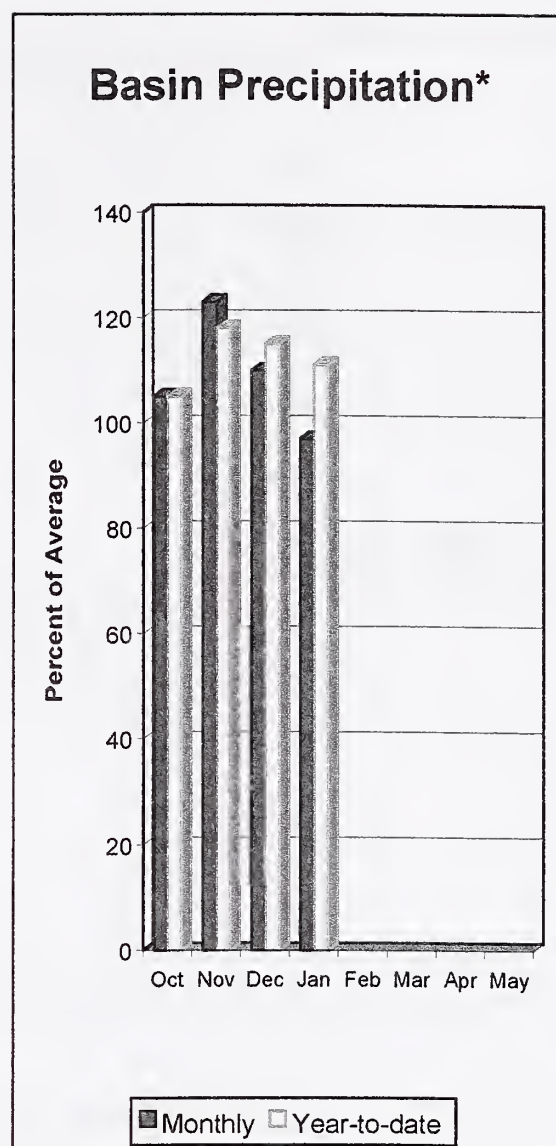
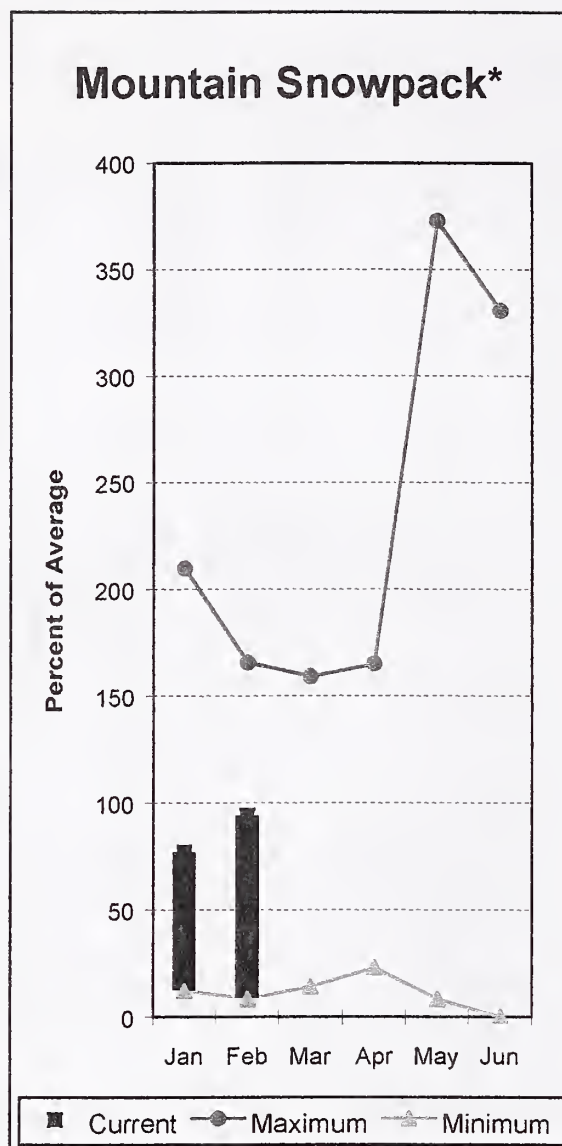
Snowpack - 83%

Precipitation - 94%

Reservoir - 131%



Wenatchee - Chelan River Basins



*Based on selected stations

Precipitation during January was 97% of average in the basin and 111% for the year-to-date. Runoff for the Entiat River is forecast to be 101% of average for the summer. The April-September average forecast for Chelan River is 102%, Wenatchee River at Plain is 100% and Stehekin is 102%. Icicle, Stemilt and Squilchuck creeks are all expected to have near normal flows this summer. January average streamflows on the Chelan River were 37% and on the Wenatchee River 86%. February 1 average snowpack in Wenatchee Basin was 102%, in Chelan Basin was 106%, Colockum Ridge was 93%; and Stemilt Creek was 88%. Snowpack in the Entiat River Basin was 83% of average. Reservoir storage in Lake Chelan was 444,100 acre feet, 99% of February 1 average and 66% of capacity. Lyman Lake SNOTEL had the most snow water with 44.6 inches of water. This site would normally have 39 inches on February 1. Temperatures were about 2 degrees above normal for January.

For more information contact your local Natural Resources Conservation Service office.

Wenatchee - Chelan River Basins

Streamflow Forecasts - February 1, 2000

Forecast Point	Forecast Period	<===== Drier =====>		Future Conditions		===== Wetter =====>		30-Yr Avg. (1000AF)
		90%	70%	50% (Most Probable)		30%	10%	
		(1000AF)	(1000AF)	(1000AF)	(% AVG.)	(1000AF)	(1000AF)	
CHELAN RIVER near Chelan	APR-SEP	1003	1109	1180	102	1251	1357	1160
	APR-JUL	895	984	1044	102	1104	1193	1024
	APR-JUN	701	777	828	102	879	955	812
STEHEKIN near STEHEKIN	APR-SEP	726	794	840	102	886	954	827
	APR-JUL	625	678	715	102	752	805	701
	APR-JUN	476	521	552	103	583	628	538
ENTIAT RIVER near Ardenvoir	APR-SEP	188	213	230	101	247	272	227
	APR-JUL	172	195	210	102	225	248	206
	APR-JUN	139	159	172	102	185	205	169
WENATCHEE at Plain	APR-SEP	1012	1118	1190	100	1262	1368	1190
	APR-JUL	940	1018	1070	100	1122	1200	1072
	APR-JUN	770	826	864	100	902	958	864
WENATCHEE R. at Peshastin	APR-SEP	1074	1411	1640	100	1869	2206	1636
	APR-JUL	979	1283	1490	100	1697	2001	1485
	APR-JUN	800	1044	1210	101	1376	1620	1204
STEMILT nr Wenatchee (miners in)	MAY-SEP	92	120	139	101	158	196	138
ICICLE CREEK near Leavenworth	APR-SEP	321	345	361	105	377	401	344
	APR-JUL	297	319	334	105	349	371	318
	APR-JUN	236	259	275	105	291	314	263
COLUMBIA R. bl Rock Island Dam (2)	APR-SEP	60376	68488	74000	105	79512	87624	70485
	APR-JUL	51188	58042	62700	105	67358	74212	59736
	APR-JUN	40400	45759	49400	105	53041	58400	47007

WENATCHEE - CHELAN RIVER BASINS Reservoir Storage (1000 AF) - End of January

WENATCHEE - CHELAN RIVER BASINS Watershed Snowpack Analysis - February 1, 2000

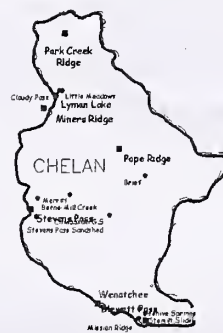
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
CHELAN LAKE	676.1	444.1	334.1	450.6	CHELAN LAKE BASIN	5	73	106
					ENTIAT RIVER	2	65	83
					WENATCHEE RIVER	13	73	102
					SQUILCHUCK CREEK	0	0	0
					STEMILT CREEK	2	69	88
					COLOCKUM CREEK	2	64	93

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

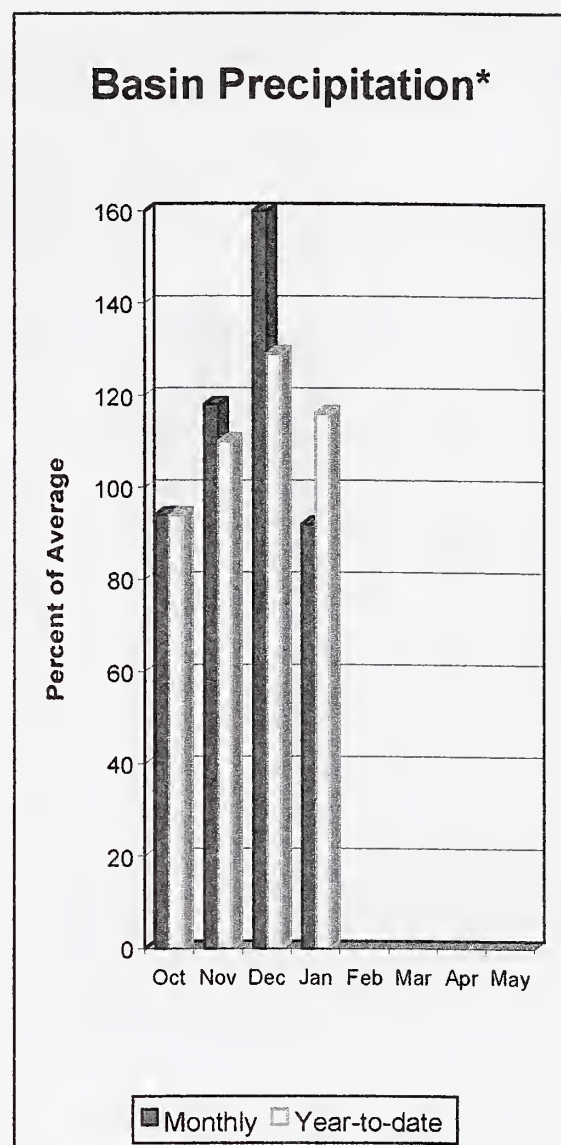
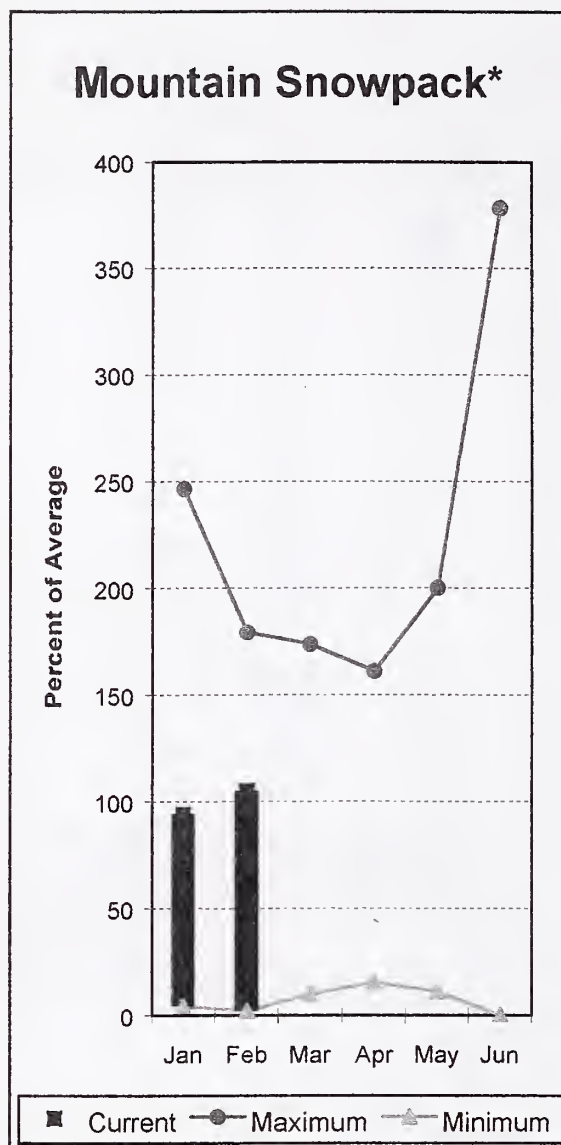
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- (1) - The values listed under the 10% and 90% Chance of Exceeding are actual 5% and 95% exceedance levels.
 (2) - The value is natural flow - actual flow may be affected by upstream water management.

WENATCHEE-CHELAN BASIN
Percent of Average
February 1, 2000
Snowpack - 94%
Precipitation - 111%
Reservoir - 99%



Upper Yakima River Basin



*Based on selected stations

February 1 reservoir storage for the Upper Yakima reservoirs was 579,700-acre feet, 112% of average. Forecasts for the Yakima River at Cle Elum are 103% of average. Lake inflows are all expected to be above average this summer. January streamflows within the basin were Yakima near Cle Elum at 89% and Cle Elum River near Roslyn at 51%. February 1 snowpack was 105% based upon 12 snow courses and SNOTEL readings within the Upper Yakima Basin. Precipitation was 92% of average for January and 116% year-to-date for water. Volume forecasts for the Yakima Basin are for natural flow. As such, they may differ from the U.S. Bureau of Reclamation's forecast for the total water supply available, which includes irrigation return flow.

For more information contact your local Natural Resources Conservation Service office.

Upper Yakima River Basin

Streamflow Forecasts - February 1, 2000

		<<===== Drier =====>>		Future Conditions		===== Wetter =====>>			
Forecast Point	Forecast Period	=====		Chance Of Exceeding *		=====			
		90%	70%	50% (Most Probable)		30%	10%		30-Yr Avg.
		(1000AF)	(1000AF)	(1000AF)	(% AVG.)	(1000AF)	(1000AF)		(1000AF)
KEECHELUS LAKE INFLOW	APR-JUL	106	120	130	105	140	154		124
	APR-SEP	116	131	142	105	153	168		135
	APR-JUN	95	106	114	105	122	133		109
KACHESS LAKE INFLOW	APR-JUL	94	106	114	103	122	134		111
	APR-SEP	100	113	122	103	131	144		118
	APR-JUN	86	96	102	103	108	118		99
CLE ELUM LAKE INFLOW	APR-JUL	362	397	420	103	443	478		409
	APR-SEP	391	432	460	103	488	529		448
	APR-JUN	307	335	355	103	375	403		345
YAKIMA at Cle Elum	APR-JUN	636	699	742	103	785	848		721
	APR-JUL	733	807	857	103	907	981		832
	APR-SEP	805	885	940	103	995	1075		915

UPPER YAKIMA RIVER BASIN Reservoir Storage (1000 AF) - End of January

Reservoir	Usable Capacity	*** Usable Storage ***		
		This Year	Last Year	Avg
		Year	Year	
KEECHELUS	157.8	75.9	78.6	96.0
KACHESS	239.0	192.0	152.1	170.0
CLE ELUM	436.9	311.8	201.4	251.0

UPPER YAKIMA RIVER BASIN Watershed Snowpack Analysis - February 1, 2000

Watershed	Number of Data Sites	This Year as % of	
		Last Yr	Average
UPPER YAKIMA RIVER	12	75	105

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.

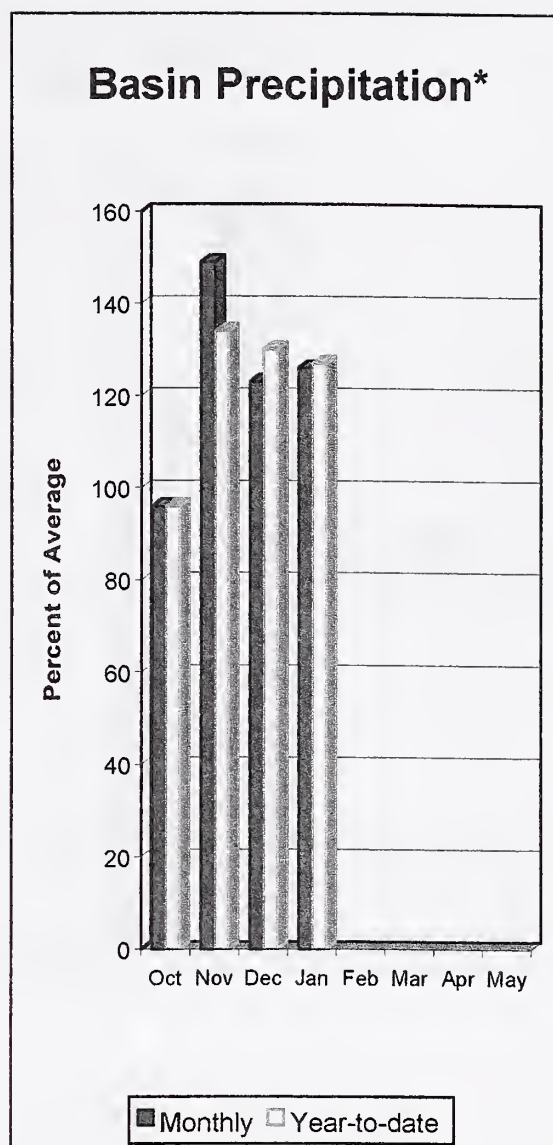
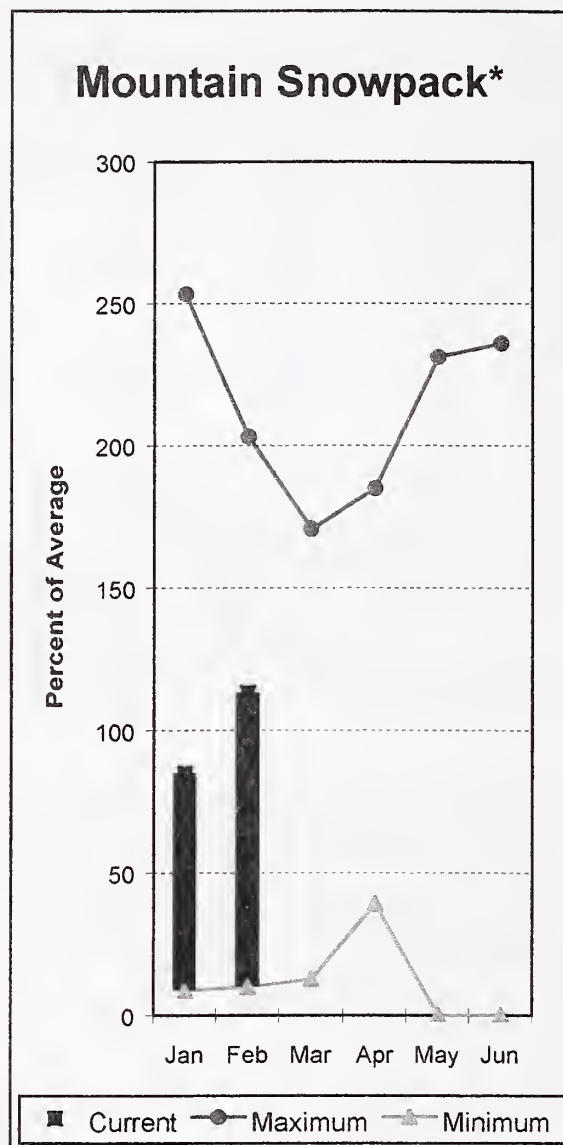
(2) - The value is natural flow - actual flow may be affected by upstream water management.



UPPER YAKIMA BASIN
Percent of Average
February 1, 2000

Snowpack - 105%
Precipitation - 116%
Reservoir - 112%

Lower Yakima River Basin



*Based on selected stations

January average streamflows within the basin were: Yakima River near Parker, 62%; Naches River near Naches, 73%; and Yakima River at Kiona, 90%. February 1 reservoir storage for Bumping and Rimrock reservoirs was 154,800-acre feet, 125% of average. Forecast averages for Yakima River at Parker are 100%; American River near Nile, 100%; Ahtanum Creek, 102%; and Klickitat River near Glenwood, 118%. February 1 snowpack was 113% based upon 8 snow courses and SNOTEL readings within the Lower Yakima Basin. Precipitation was 126% of average for January and 127% year-to-date for water. Average temperatures for the month were near normal. Volume forecasts for Yakima Basin are for natural flow. As such, they may differ from the U.S. Bureau of Reclamation's forecast for the total water supply available, which includes irrigation return flow.

For more information contact your local Natural Resources Conservation Service office.

Lower Yakima River Basin

Streamflow Forecasts - February 1, 2000

		<<===== Drier ----- Future Conditions ----- Wetter =====>>						
Forecast Point	Forecast Period	Chance Of Exceeding *						30-Yr Avg. (1000AF)
		90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
BUMPING LAKE INFLOW	APR-SEP	114	129	140	103	151	166	136
	APR-JUL	105	119	128	103	137	151	124
	APR-JUN	85	98	107	103	116	129	104
AMERICAN RIVER near Nile	APR-SEP	97	110	118	100	126	139	118
	APR-JUL	90	101	109	100	117	128	109
	APR-JUN	74	85	92	100	99	110	92
RIMROCK LAKE INFLOW	APR-SEP	198	223	240	101	257	282	238
	APR-JUL	169	189	202	101	215	235	200
	APR-JUN	138	153	164	101	175	190	162
NACHES near Naches	APR-SEP	701	778	830	100	882	959	832
	APR-JUL	643	710	755	100	800	867	755
	APR-JUN	553	611	650	100	689	747	651
AHTANUM CREEK nr Tampico (2)	APR-SEP	28	40	47	102	55	66	46
	APR-JUL	26	36	43	102	50	60	42
	APR-JUN	22	31	37	102	43	51	36
YAKIMA near Parker	APR-SEP	1678	1870	2000	100	2130	2322	1994
	APR-JUL	1511	1683	1800	100	1917	2089	1805
	APR-JUN	1355	1501	1600	100	1699	1845	1597
Klickitat near Glenwood	APR-JUN	109	122	130	118	138	151	110
	APR-SEP	135	153	165	118	177	195	140

LOWER YAKIMA RIVER BASIN Reservoir Storage (1000 AF) - End of January

Reservoir	Usable Capacity	*** Usable Storage ***		
		This Year	Last Year	Avg
BUMPING LAKE	33.7	14.1	12.2	9.0
RIMROCK	198.0	140.7	110.5	115.0

LOWER YAKIMA RIVER BASIN Watershed Snowpack Analysis - February 1, 2000

Watershed	Number of Data Sites	This Year as % of	
		Last Yr	Average
BUMPING LAKE			
RIMROCK			

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

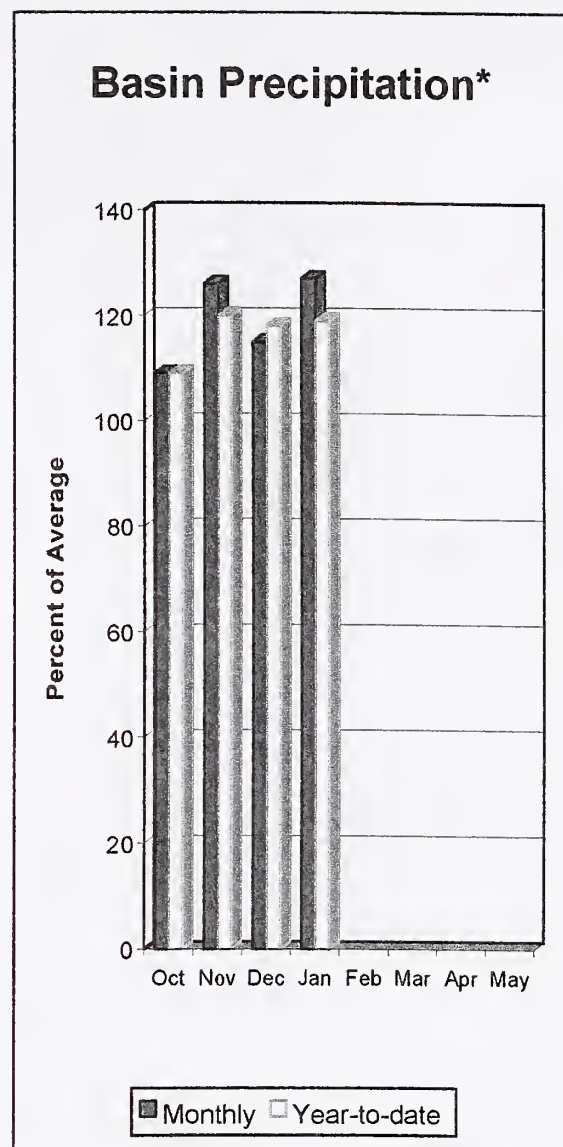
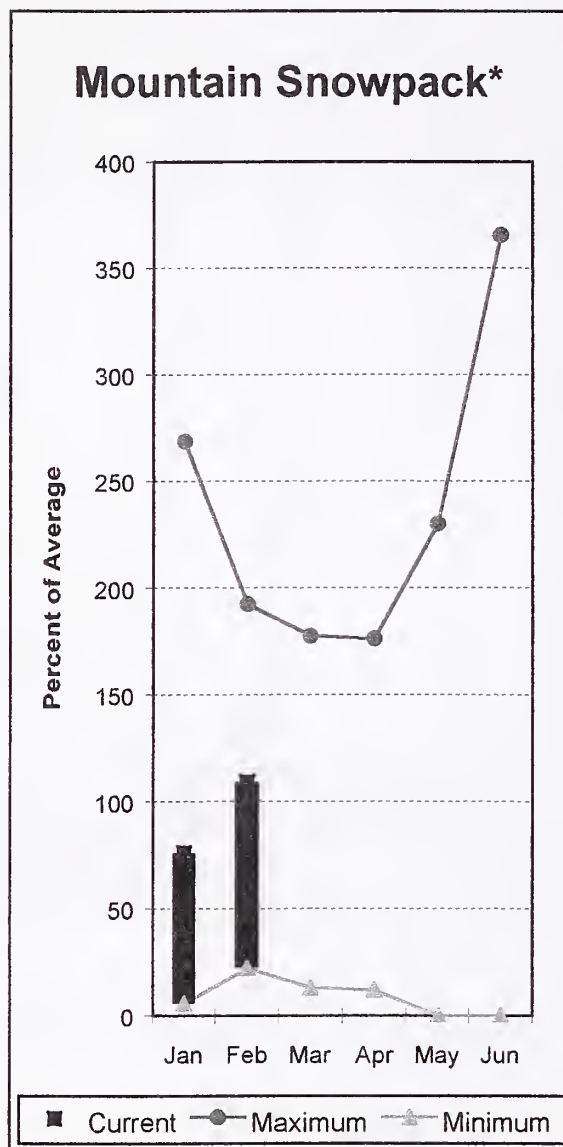
The average is computed for the 1961-1990 base period.

- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
 (2) - The value is natural flow - actual flow may be affected by upstream water management.



LOWER YAKIMA BASIN
Percent of Average
February 1, 2000
Snowpack - 113%
Precipitation - 127%
Reservoir - 125%

Walla Walla River Basin



*Based on selected stations

January precipitation was 127% of average, bringing the year-to-date precipitation to 119% of average. February 1 average snowpack was at 109%. The forecast for the coming summer is for 106% of average streamflow in the South Fork Walla Walla River and 107% for Mill Creek. January streamflow was 85% of average for the Walla Walla River. The Touchet SNOTEL site had 22.5 inches of snow-water-equivalent. The average February 1 reading for this site is 20.8 inches. Average temperatures were 1 degree above normal for the area.

For more information contact your local Natural Resources Conservation Service office.

Walla Walla River Basin

Streamflow Forecasts - February 1, 2000

		<<===== Drier =====		Future Conditions		===== Wetter =====>>		
Forecast Point	Forecast Period	=====		Chance Of Exceeding *		=====		30-Yr Avg. (1000AF)
		90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
MILL CREEK at Walla Walla	APR-SEP	10.2	15.0	18.3	107	22	26	17.1
	APR-JUL	9.9	14.7	18.0	107	21	26	16.9
	APR-JUN	9.7	14.5	17.7	106	21	26	16.7
SF WALLA WALLA near Milton-Freewater	APR-JUL	46	53	57	108	61	68	53
	APR-SEP	58	65	70	106	75	82	66

WALLA WALLA RIVER BASIN Reservoir Storage (1000 AF) - End of January					WALLA WALLA RIVER BASIN Watershed Snowpack Analysis - February 1, 2000			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
					WALLA WALLA RIVER	2	76	109

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

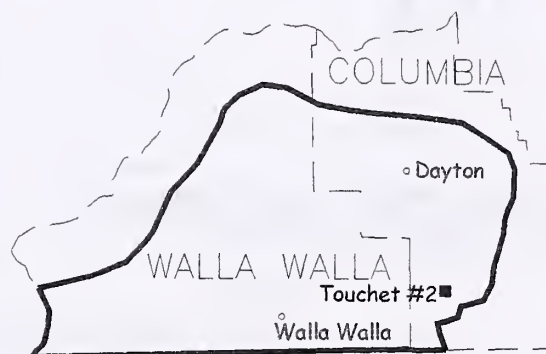
The average is computed for the 1961-1990 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.

(2) - The value is natural flow - actual flow may be affected by upstream water management.

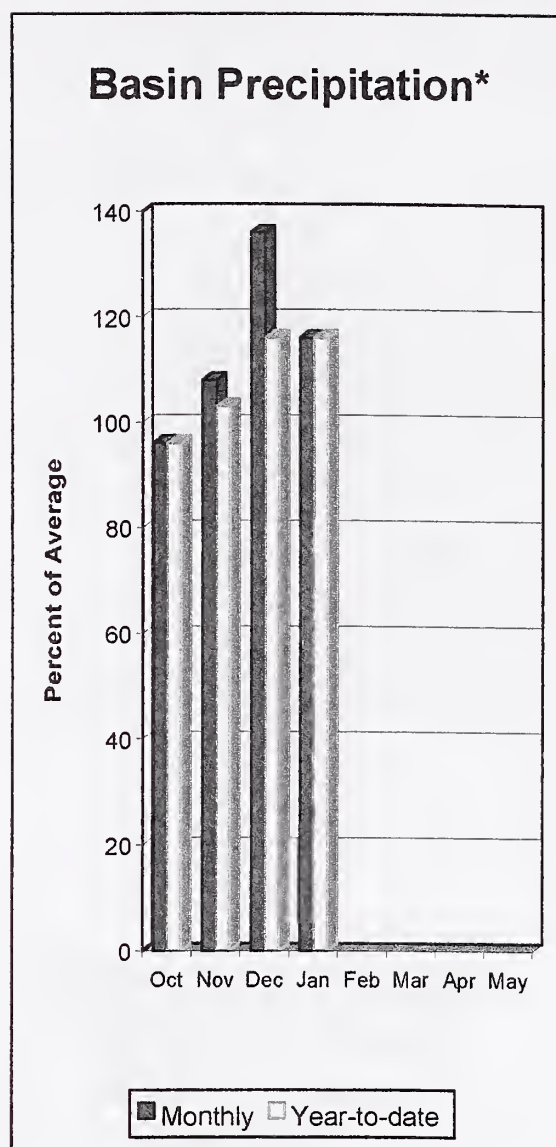
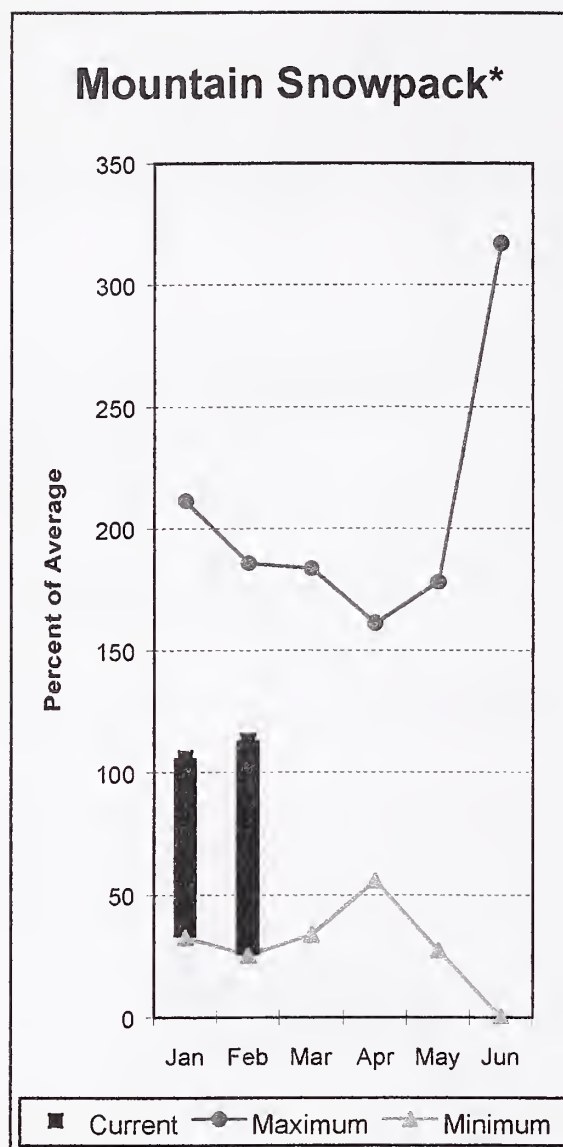
WALLA WALLA BASIN
Percent of Average
February 1, 2000

Snowpack - 109%
Precipitation - 119%



High Ridge ■

Lower Snake River Basin



*Based on selected stations

The April - September forecast is for 91% of average streamflow in the Snake River below Lower Granite Dam, 107% for Grande Ronde at Troy, and 105% for Clearwater River at Spalding. January precipitation was 116% of average, maintaining the year-to-date precipitation at 116% of average. February 1 snowpack was at 113% of average. January streamflow was 84% of average for Snake River below Lower Granite Dam and 68% for Grande Ronde River near Troy. Average temperatures were 2 degrees above normal for the area.

For more information contact your local Natural Resources Conservation Service office.

Lower Snake River Basin

Streamflow Forecasts - February 1, 2000

		<<===== Drier =====		Future Conditions		===== Wetter =====>>		
Forecast Point	Forecast Period	Chance Of Exceeding *						30-Yr Avg. (1000AF)
		90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
GRANDE RONDE at Troy (1)	MAR-JUL	1002	1392	1570	107	1748	2138	1471
	APR-SEP	886	1239	1400	107	1561	1914	1312
CLEARWATER at Spalding (1,2)	APR-JUL	6233	7434	7980	105	8526	9727	7618
	APR-SEP	6717	7895	8430	105	8965	10143	8051
SNAKE blw Lower Granite Dam (1,2)	APR-JUL	10385	16791	19700	91	22609	29015	21650
	APR-SEP	11731	18930	22200	91	25470	32669	24360

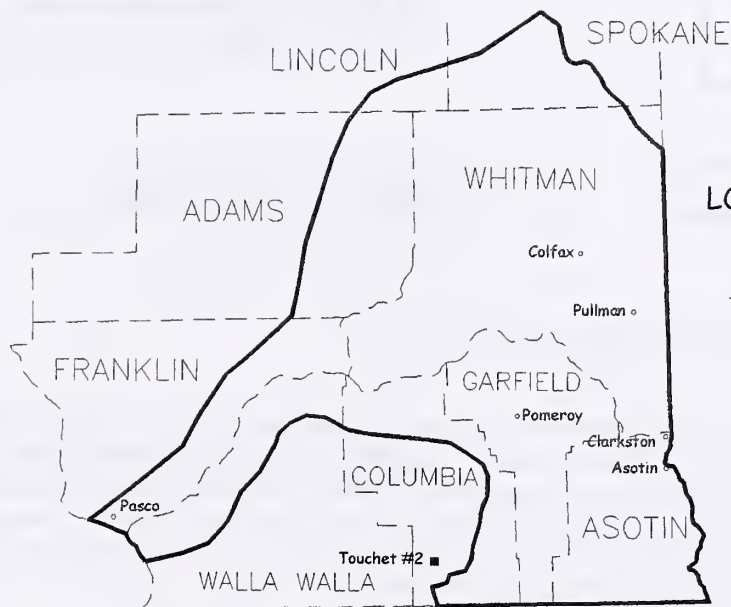
LOWER SNAKE RIVER BASIN Reservoir Storage (1000 AF) - End of January					LOWER SNAKE RIVER BASIN Watershed Snowpack Analysis - February 1, 2000			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
					LOWER SNAKE, GRANDE RONDE	14	87	112

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

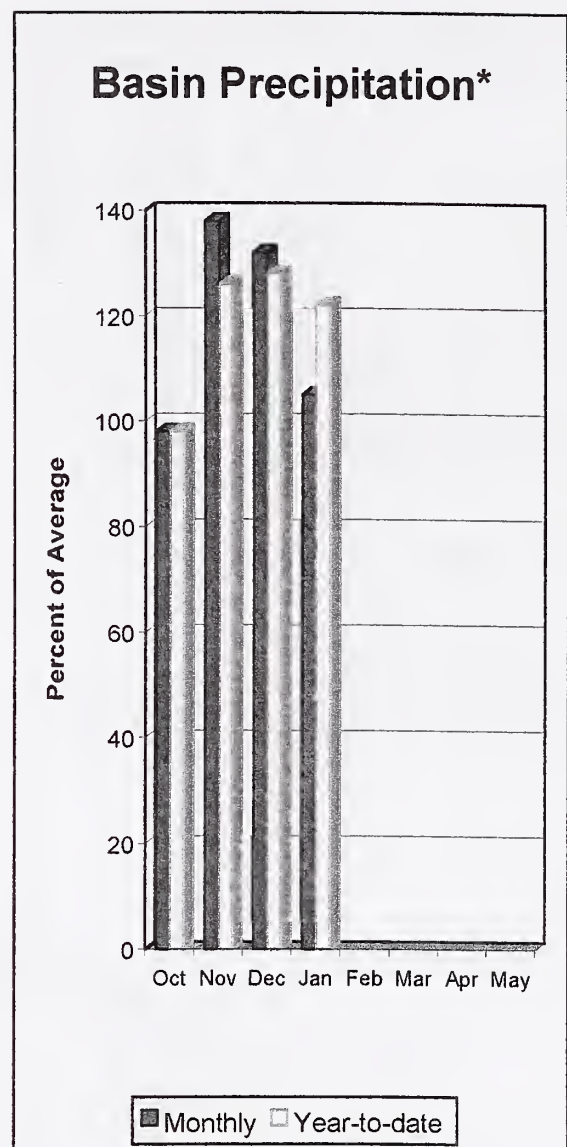
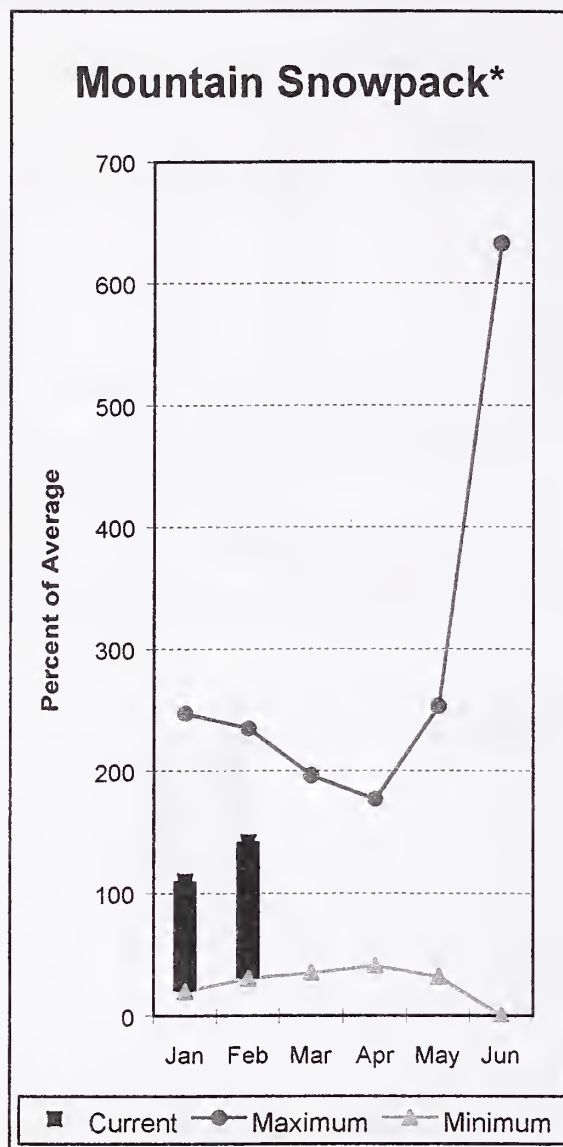
The average is computed for the 1961-1990 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.

(2) - The value is natural flow - actual flow may be affected by upstream water management.



LOWER SNAKE RIVER BASIN
Percent of Average
February 1, 2000
Snowpack - 113%
Precipitation - 116%



*Based on selected stations

All streams within the basin are forecasted to receive near to slightly above normal flows for the coming summer. January average streamflow for Cowlitz River was 64% and 51% for Lewis River. January precipitation was 105% of average and the water-year average was 102%. February 1 snow cover for Cowlitz River was 126%, and Lewis River was 158% of average. The Paradise Park SNOTEL recorded the most water content for the basin with 53.9 inches of water. Average February 1 water content is 38.5 inches. Average temperatures were slightly below normal during January.

For more information contact your local Natural Resources Conservation Service office.

Cowlitz - Lewis River Basins

Streamflow Forecasts - February 1, 2000

Forecast Point	Forecast Period	<<----- Drier -----		Future Conditions		----- Wetter ----->>		30-Yr Avg. (1000AF)
		Chance Of Exceeding *		50% (Most Probable)				
		90% (1000AF)	70% (1000AF)	(1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
LEWIS at Ariel (2)	APR-JUL	870	1044	1163	110	1282	1456	1053
	APR-SEP	1037	1218	1340	111	1462	1643	1206
	APR-JUN	780	944	1056	113	1168	1332	935
COWLITZ R. bl Mayfield Dam (2)	APR-SEP	1332	1825	2160	110	2495	2988	1970
	APR-JUL	1174	1606	1900	110	2194	2626	1731
	APR-JUN	1005	1374	1625	110	1876	2245	1477
COWLITZ R. at Castle Rock (2)	APR-SEP	2030	2554	2910	109	3266	3790	2667
	APR-JUL	1772	2229	2540	109	2851	3308	2325
	APR-JUN	1515	1908	2175	109	2442	2835	1995
KLICKITAT near Glenwood	APR-JUN	109	122	130	118	138	151	110
	APR-SEP	135	153	165	118	177	195	140
COLUMBIA R. at The Dalles (2)	APR-SEP	77130	90390	99400	100	108410	121670	98982
	APR-JUL	66283	77606	85300	101	92994	104317	84760
	APR-JUN	53614	62775	69000	100	75225	84386	68925

COWLITZ - LEWIS RIVER BASINS Reservoir Storage (1000 AF) - End of January

Reservoir	Usable Capacity	*** Usable Storage ***		
		This Year	Last Year	Avg

COWLITZ - LEWIS RIVER BASINS Watershed Snowpack Analysis - February 1, 2000

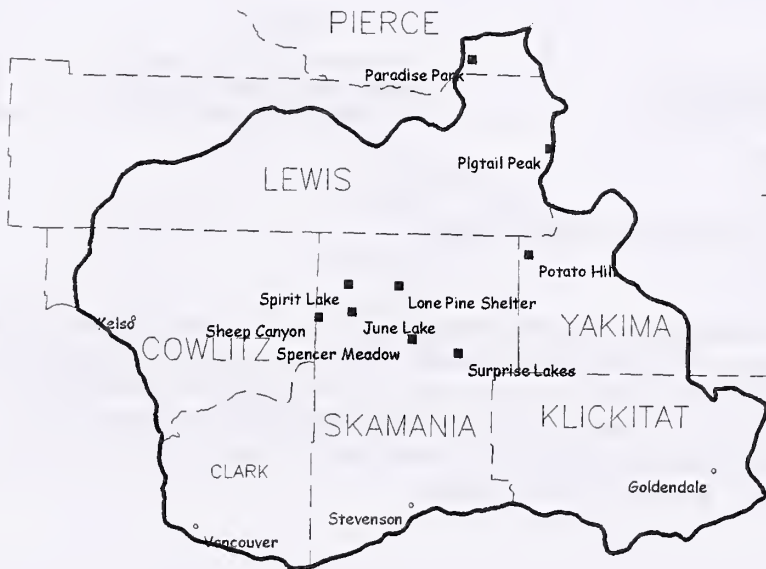
Watershed	Number of Data Sites	This Year as % of	
		Last Yr	Average
LEWIS RIVER	4	94	158
COWLITZ RIVER	7	80	126

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.

(2) - The value is natural flow - actual flow may be affected by upstream water management.



COWLITZ-LEWIS BASIN

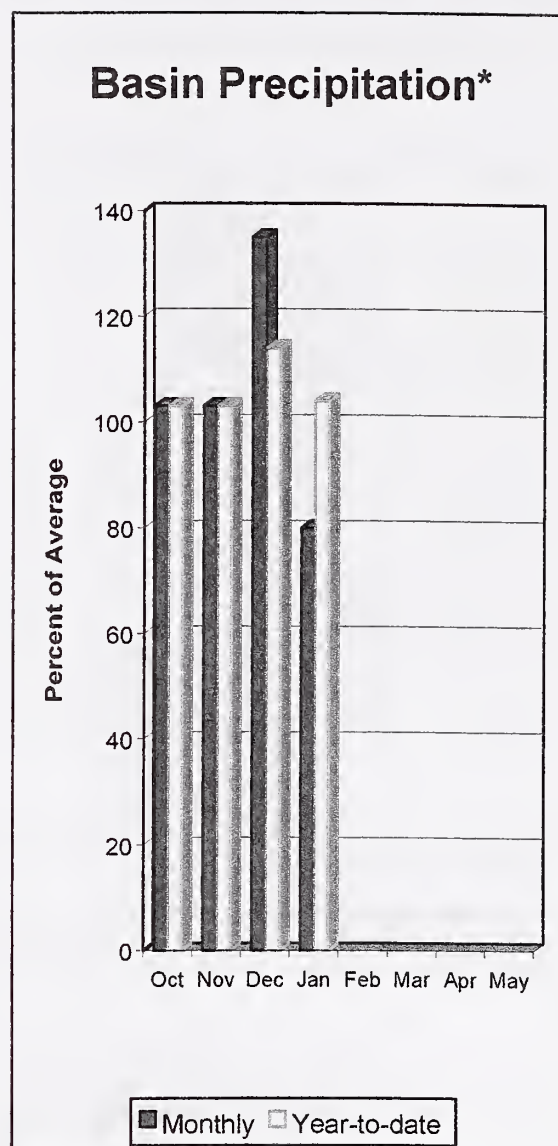
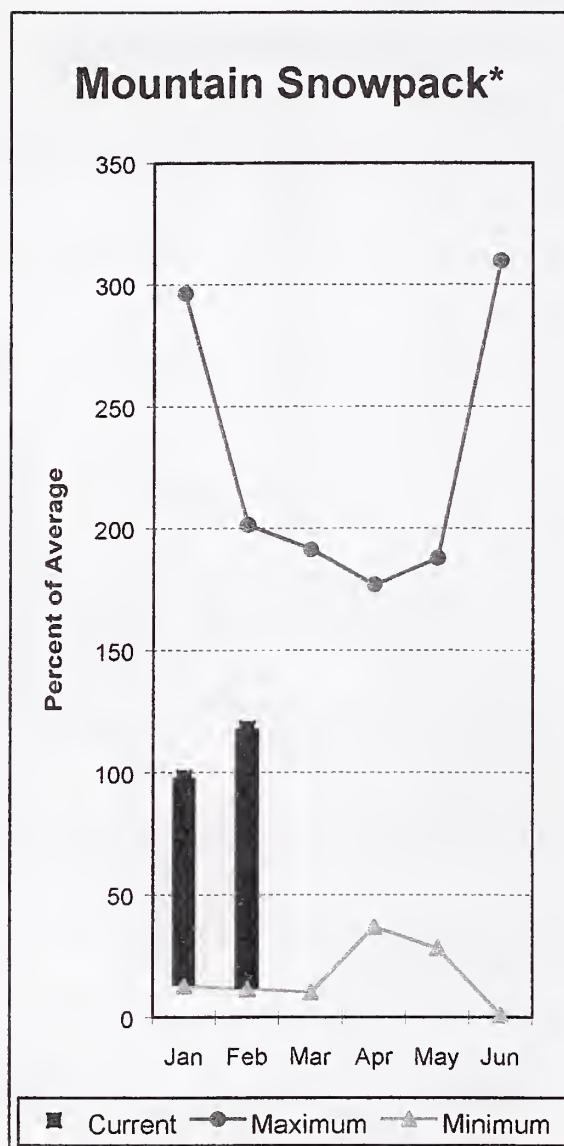
Percent of Average

February 1, 2000

Snowpack - 142%

Precipitation - 122%

White - Green River Basins



*Based on selected stations

Summer runoff is forecast to be 97% of average for both the Green River below Howard Hanson Dam and the White River near Buckley. February 1 snowpack was 119% of average in both White River and Puyallup river basins and 115% in Green River Basin. Water content on February 1 at Corral Pass SNOTEL, at an elevation of 6,000 feet, was 26.4 inches. This site has a February 1 average of 21.3 inches. January precipitation was 80% of average, bringing the water year-to-date to 104% of average for the basins. Average temperatures in the area were near normal.

For more information contact your local Natural Resources Conservation Service office.

White - Green - Puyallup River Basins

Streamflow Forecasts - February 1, 2000

		<<----- Drier ----->>		Future Conditions		----- Wetter ----->>		
Forecast Point	Forecast Period	Chance Of Exceeding * -----						
		90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
WHITE near Buckley (1,2)	APR-JUL	334	401	432	97	463	530	447
	APR-SEP	410	488	524	97	560	638	542
GREEN below Howard Hanson (1,2)	APR-JUL	166	224	251	98	278	336	257
	APR-SEP	190	250	277	97	304	364	285
	APR-JUN	149	203	228	97	253	307	234

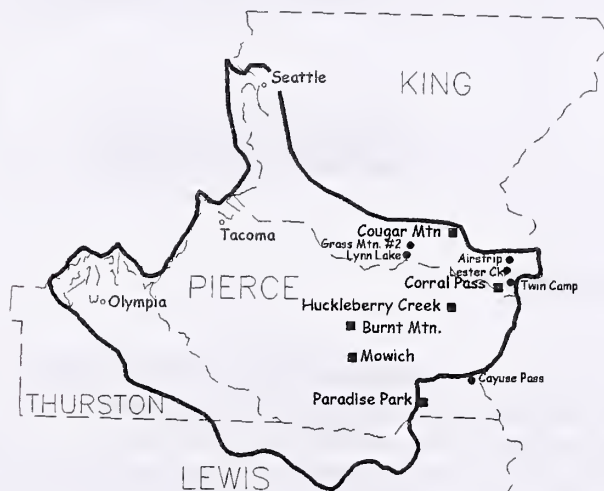
WHITE - GREEN - PUYALLUP RIVER BASINS Reservoir Storage (1000 AF) - End of January

Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
					WHITE RIVER	3	94	119
					GREEN RIVER	7	108	109
					PUYALLUP RIVER	3	96	119

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

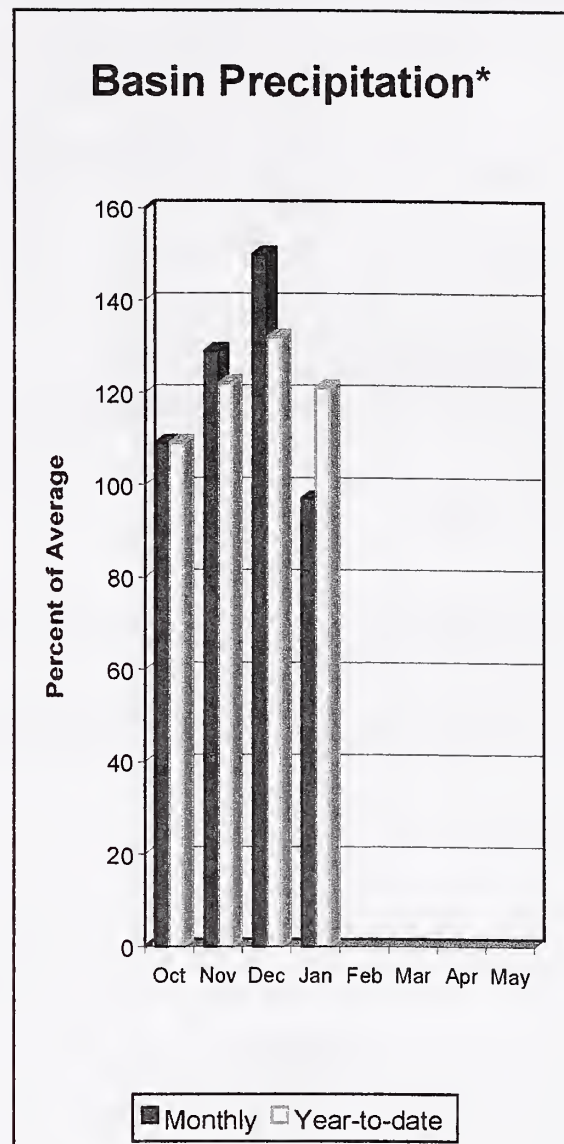
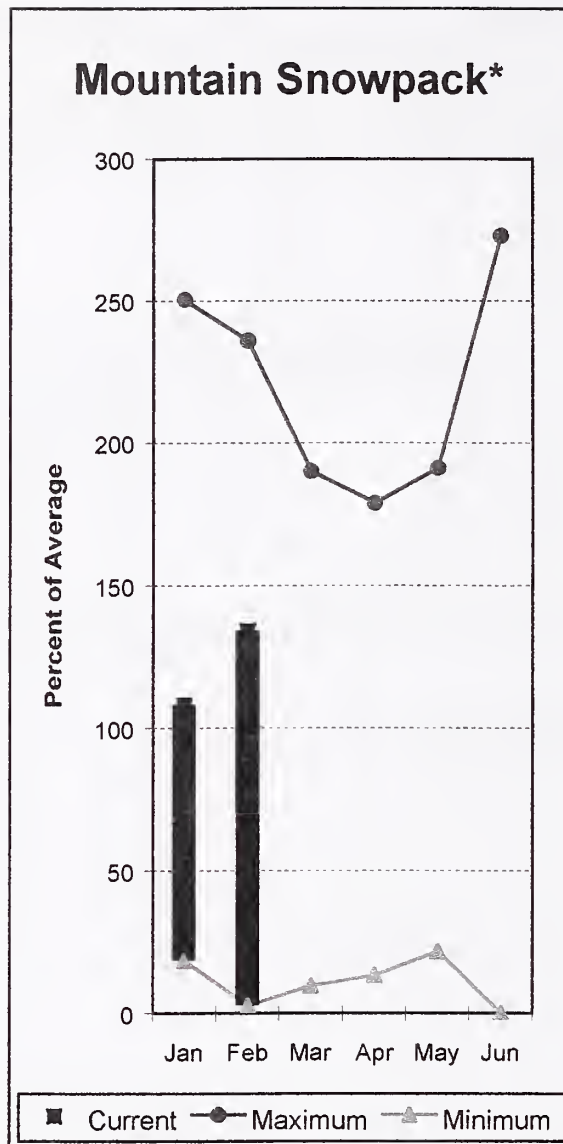
- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
 (2) - The value is natural flow - actual flow may be affected by upstream water management.



WHITE-GREEN-PUYALLUP BASINS Percent of Average February 1, 2000

Snowpack - 118%
Precipitation - 104%

Central Puget Sound River Basins



*Based on selected stations

Forecast for spring and summer flows are: 105% for Cedar River near Cedar Falls; 105% for Rex River; 105% for South Fork of the Tolt River; and 98% for Cedar River at Cedar Falls. Basin-wide precipitation for January was 97% of average, bringing water-year-to-date to 121% of average. February 1 average snow cover in Cedar River Basin was 142%, Tolt River Basin was 157%, Snoqualmie River Basin was 121%, and Skykomish River Basin was 115%. Alpine Meadows SNOTEL, at 3500 feet, had 43.8 inches of water content. Average February 1 water content at Alpine Meadows is 28.8 inches. Average temperatures were near normal for the past month.

For more information contact your local Natural Resources Conservation Service office.

Central Puget Sound River Basins

Streamflow Forecasts - February 1, 2000

		<<===== Drier ===== Future Conditions ===== Wetter =====>>							
Forecast Point	Forecast Period	Chance Of Exceeding *						30-Yr Avg. (1000AF)	
		90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF) (% AVG.)		30% (1000AF)	10% (1000AF)		
CEDAR near Cedar Falls	APR-JUL	61	73	80	105	88	99	77	
	APR-SEP	68	80	88	105	96	108	84	
	APR-JUN	54	64	71	104	77	87	68	
REX near Cedar Falls	APR-JUL	20	25	29	105	32	37	27	
	APR-SEP	23	28	32	105	35	41	30	
	APR-JUN	19.2	24	27	110	30	35	25	
CEDAR RIVER at Cedar Falls	APR-JUL	52	70	81	99	93	110	82	
	APR-SEP	54	70	82	98	93	110	83	
	APR-JUN	54	69	80	100	90	106	80	
SOUTH FORK TOLT near Index	APR-JUL	12.8	14.8	16.1	106	17.4	19.4	15.2	
	APR-SEP	15.2	17.3	18.7	105	20	22	17.8	
	APR-JUN	10.7	12.6	13.8	105	15.0	16.9	13.1	

CENTRAL PUGET SOUND RIVER BASINS Reservoir Storage (1000 AF) - End of January

Reservoir	Usable Capacity	*** Usable Storage ***		
		This Year	Last Year	Avg

CENTRAL PUGET SOUND RIVER BASINS Watershed Snowpack Analysis - February 1, 2000

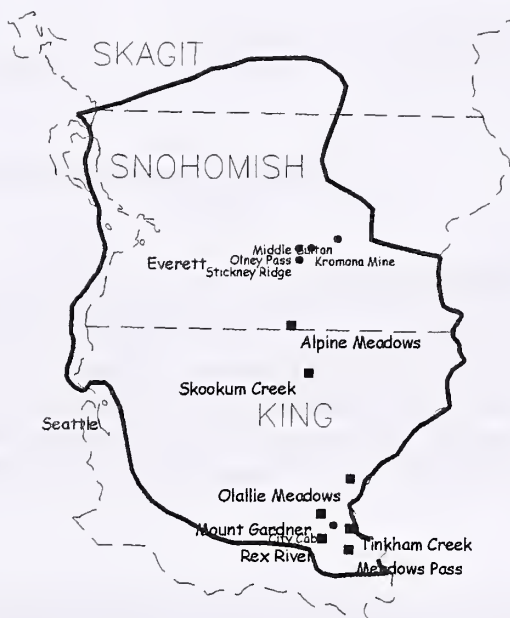
Watershed	Number of Data Sites	This Year as % of	
		Last Yr	Average
CEDAR RIVER	4	93	142
TOLT RIVER	2	119	157
SNOQUALMIE RIVER	5	91	121
SKYKOMISH RIVER	3	88	115

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

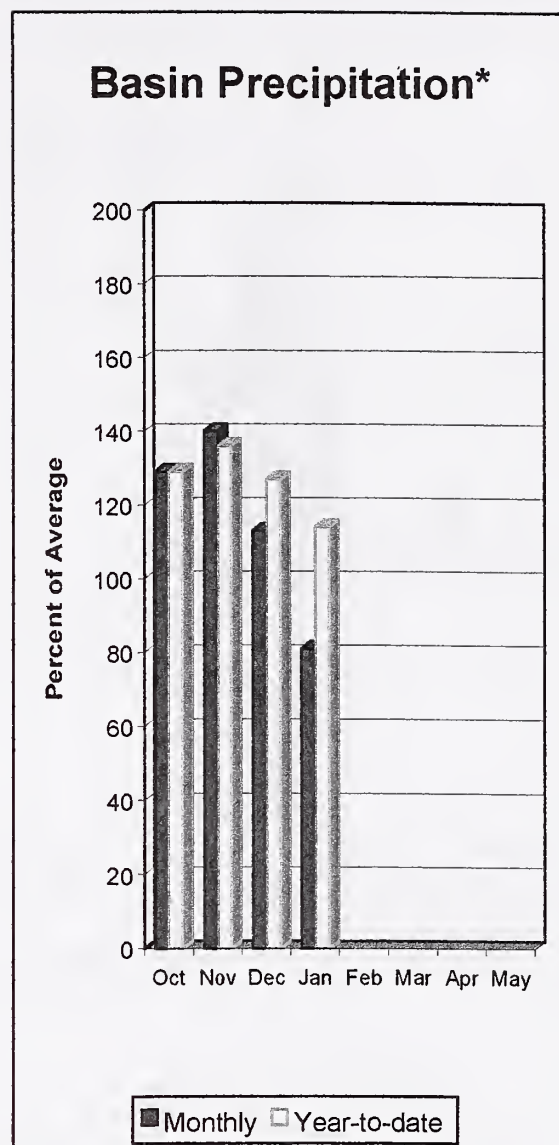
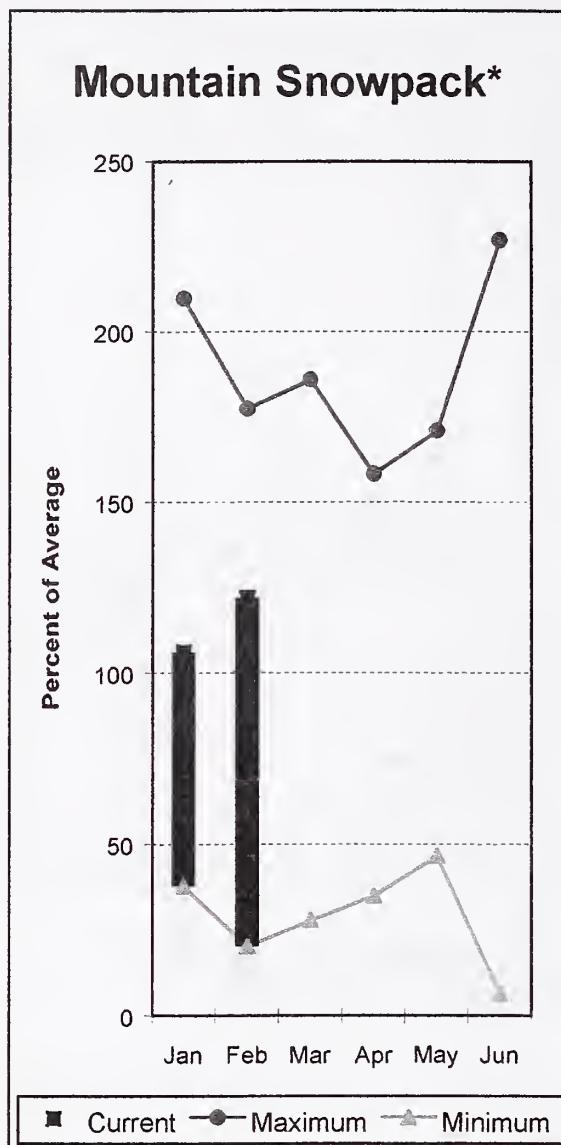
The average is computed for the 1961-1990 base period.

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 (2) - The value is natural flow - actual flow may be affected by upstream water management.

CENTRAL PUGET BASIN
Percent of Average
February 1, 2000
Snowpack - 134%
Precipitation - 121%



North Puget Sound River Basins



*Based on selected stations

Forecast for Skagit River streamflow is 105% of average for the spring and summer period. January streamflow in Skagit River was 70% of average. Other forecast points included Baker River at 114% and Thunder Creek at 101% of average. Basin-wide precipitation for January was 81% of average, bringing water-year-to-date to 114% of average. February 1 average snow cover in Skagit River Basin was 105%, and Nooksack River Basin was 127%. Rainy Pass SNOTEL, at 4,780 feet, had 25 inches of water content. Average February 1 water content was 24.5 inches. February 1 Skagit River reservoir storage was 99% of average and 74% of capacity. Average January temperatures were slightly below normal for the basin.

For more information contact your local Natural Resources Conservation Service office.

North Puget Sound River Basins

Streamflow Forecasts - February 1, 2000

		<<===== Drier =====		Future Conditions		===== Wetter =====>>		
Forecast Point	Forecast Period	Chance Of Exceeding *						30-Yr Avg. (1000AF)
		90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
THUNDER CREEK near Newhalem	APR-JUL	209	224	234	102	244	259	230
	APR-SEP	301	319	331	101	343	361	328
	APR-JUN	122	140	152	102	164	182	149
SKAGIT at Newhalem (2)	APR-JUL	1719	1856	1950	104	2044	2181	1879
	APR-SEP	2062	2204	2300	105	2396	2538	2191
	APR-JUN	1334	1439	1510	104	1581	1686	1455
BAKER RIVER near Concrete	APR-JUL	830	904	955	114	1006	1080	836
	APR-SEP	1060	1151	1213	114	1275	1366	1064
	APR-JUN	589	653	696	114	739	803	611

NORTH PUGET SOUND RIVER BASINS Reservoir Storage (1000 AF) - End of January

Reservoir	Usable Capacity	*** Usable Storage ***		
		This Year	Last Year	Avg
ROSS	1404.1	1017.4	923.5	1033.9
DIABLO RESERVOIR	90.6	87.7	86.8	84.2
GORGE RESERVOIR		NO REPORT		

NORTH PUGET SOUND RIVER BASINS Watershed Snowpack Analysis - February 1, 2000

Watershed	Number of Data Sites	This Year as % of	
		Last Yr	Average
SKAGIT RIVER	12	71	106
BAKER RIVER	3	91	119
NOOKSACK RIVER	2	95	127

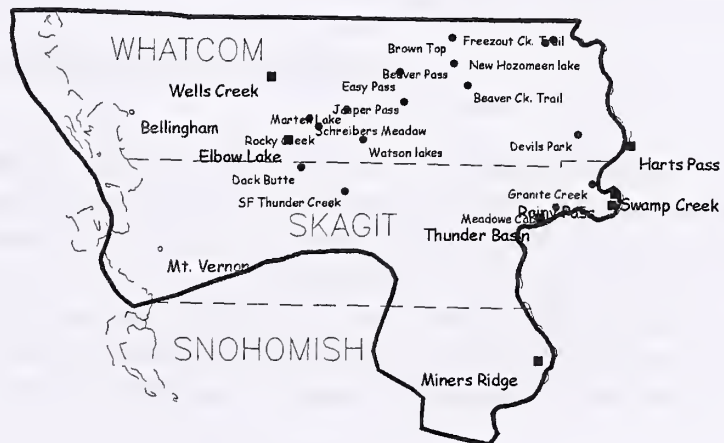
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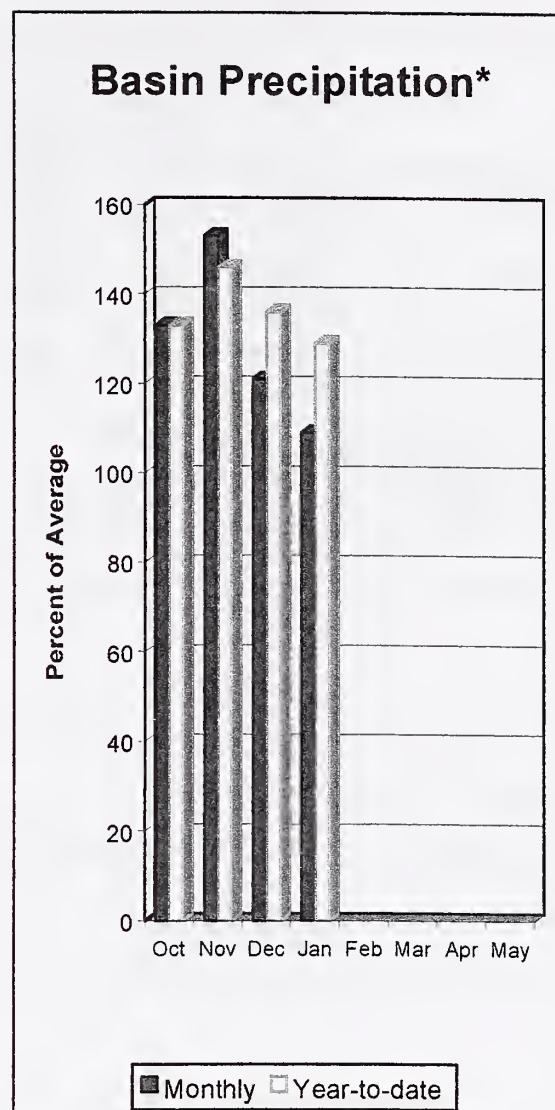
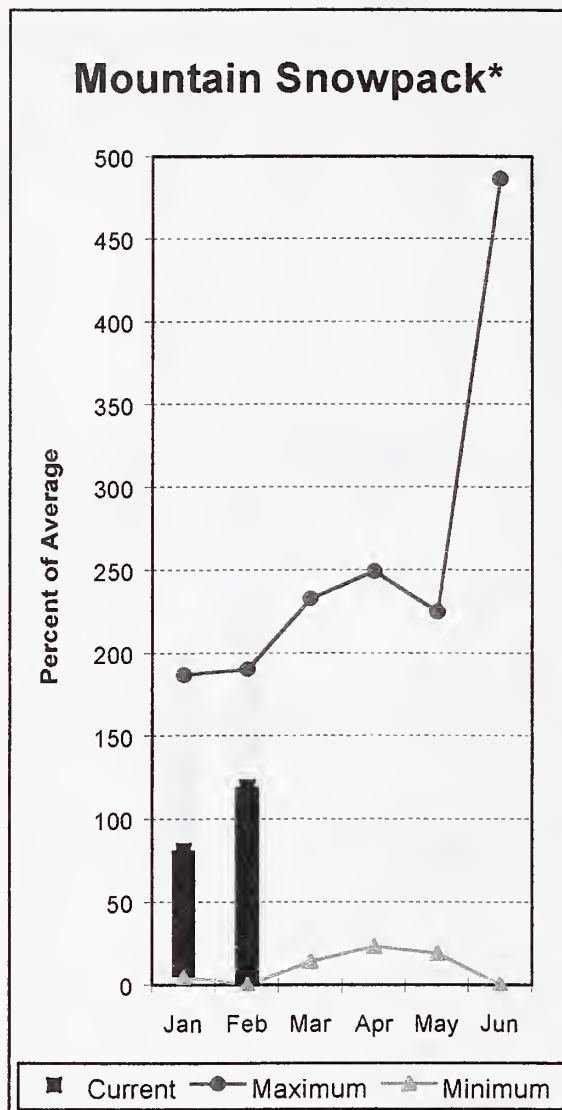
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.

(2) - The value is natural flow - actual flow may be affected by upstream water management.

NORTH PUGET BASIN
Percent of Average
February 1, 2000
Snowpack - 122%
Precipitation - 114%
Reservoir - 99%



Olympic Peninsula River Basins



*Based on selected stations

February average streamflow forecasts for Dungeness River Basin is 107% and 109% for Elwha River. Big Quilcene and Wynoochee rivers can expect near average runoff this summer also. January precipitation was 109% of average. Precipitation has accumulated at 129% of average for the water year. January precipitation at Quillayute was 12.43 inches. The thirty-year average for January is 14.65 inches. February 1 snow cover in the Olympic Basin was at 119% of average. The Mount Crag SNOTEL near Quilcene had 24.1 inches of snow-water-equivalent on February 1. Average for this site is 16.9 inches. Temperatures were slightly below average for the month.

For more information contact your local Natural Resources Conservation Service office.

Olympic Peninsula River Basins

Streamflow Forecasts - February 1, 2000

		<<===== Drier =====		Future Conditions		===== Wetter =====>>			
#	Forecast Point	Forecast Period	Chance Of Exceeding *						30-Yr Avg. (1000AF)
			90%	70%	50% (Most Probable)		30%	10%	
			(1000AF)	(1000AF)	(1000AF)	(% AVG.)	(1000AF)	(1000AF)	
=====									
DUNGENESS near Sequim	APR-SEP	145	155	162	106	169	179	153	
	APR-JUL	120	128	133	106	138	146	125	
	APR-JUN	85	94	99	106	105	114	94	
=====									
ELWHA near Port Angeles	APR-SEP	505	545	572	112	599	639	510	
	APR-JUL	421	452	473	112	494	525	424	

OLYMPIC PENINSULA RIVER BASINS Reservoir Storage (1000 AF) - End of January

Reservoir	Usable Capacity	*** Usable Storage ***		
		This Year	Last Year	Avg

OLYMPIC PENINSULA RIVER BASINS Watershed Snowpack Analysis - February 1, 2000

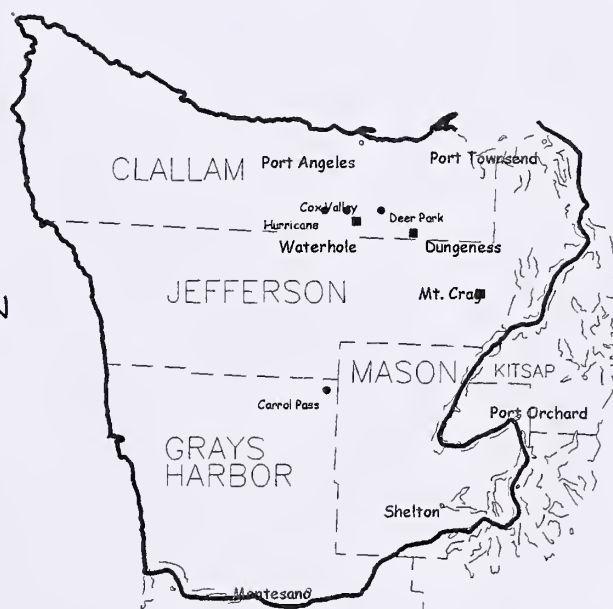
Watershed	Number of Data Sites	This Year as % of	
		Last Yr	Average
OLYMPIC PENINSULA	4	70	119
ELWHA RIVER	1	67	107
MORSE CREEK	1	83	127
DUNGENESS RIVER	1	62	89
QUILCENE RIVER	1	65	143
WYNOOCHEE RIVER	0	0	0

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
 (2) - The value is natural flow - actual flow may be affected by upstream water management.

OLYMPIC PENINSULA BASIN
 Percent of Average
 February 1, 2000
 Snowpack - 119%
 Precipitation - 129%



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The Following Organizations Cooperate with the Natural Resources Conservation Service in Snow Survey Work*:

Canada	Ministry of the Environment Investigations Branch, Victoria, British Columbia
State	Washington State Department of Ecology Washington State Department of Natural Resources
Federal	Department of the Army Corps of Engineers U.S. Department of Agriculture Forest Service U.S. Department of Commerce NOAA, National Weather Service U.S. Department of Interior Bonneville Power Administration Bureau of Reclamation Geological Survey National Park Service Bureau of Indian Affairs
Local	City of Tacoma City of Seattle Chelan County P.U.D. Pacific Power and Light Company Puget Sound Power and Light Company Washington Water Power Company Snohomish County P.U.D. Colville Confederated Tribes Spokane County Yakama Indian Nation Whatcom County Pierce County
Private	Okanogan Irrigation District Wenatchee Heights Irrigation District Newman Lake Homeowners Association Whitestone Reclamation District

*Other organizations and individuals furnish valuable information for the snow survey reports. Their cooperation is gratefully acknowledged.



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Spokane, WA



